PROJECT MANUAL
FOR

RAY HARTSTEIN CAMPUS
DOMESTIC WATER PRESSURE BOOSTER SYSTEM

7701 LINCOLN AVENUE
SKOKIE, ILLINOIS 60077

OWNER

OAKTON COMMUNITY COLLEGE
1600 EAST GOLF ROAD
DES PLAINES, ILLINOIS 60016

ARCHITECT / ENGINEER

KLUBER, INC.
41 W. BENTON STREET
AURORA, ILLINOIS 60506

DATE: December 12, 2022
PROJECT NO. 22-315-1447

SECTION 00 01 01
PROJECT TITLE PAGE

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END OF DOCUMENT

SECTION 00 01 07
SEALS PAGE

1.01 DESIGN PROFESSIONALS' SEALS

D. MECHANICAL	E. ELECTRICAL
ENGINEER	ENGINEER

END OF DOCUMENT

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1.01 GENERAL

G100 COVER SHEET, GENERAL NOTES, SYMBOLS & DRAWING INDEX

1.02 PLUMBING

P310 PARTIAL LOWER LEVEL FLOOR PLANS

END OF DOCUMENT

SECTION 00 31 13
PRELIMINARY SCHEDULE

1.01 GENERAL

A. The following represents the preliminary construction schedule for the Work. This schedule is the current estimate of the Owner to be used for purposes of bidding. All Bidders shall include the costs of all overtime, double-shift, or so-called "premium" time that may be necessary to meet this milestone.

1.02 PRELIMINARY SCHEDULE

A. Board of Trustees Approval: February 21, 2023

B. Notice to Proceed: March 1, 2023

C. Commencement of Construction: Replacement of existing System - June17-19, 2023

D. Substantial Completion: June 19, 2023

END OF DOCUMENT

SECTION 00 41 13
BID FORM - STIPULATED SUM

SINGLE CONTRACT

PROJECT: **RAY HARTSTEIN CAMPUS DOMESTIC WATER PRESSURE BOOSTER SYSTEM**
7701 LINCOLN AVENUE
SKOKIE, ILLINOIS

BID TO: **OAKTON COMMUNITY COLLEGE**
1600 EAST GOLF ROAD
DES PLAINES, IL 60016

BID FROM:

CORPORATE NAME: _____
ADDRESS: _____
CITY, STATE, ZIP: _____
TELEPHONE NO.: _____
FAX NO.: _____
EMAIL ADDRESS: _____
CONTACT PERSON: _____

ACCEPTANCE

THE UNDERSIGNED BIDDER AGREES, IF THIS BID IS ACCEPTED, TO ENTER INTO AN AGREEMENT WITH THE OWNER, IN THE FORM INCLUDED IN THE BIDDING DOCUMENTS, TO PERFORM AND FURNISH THE WORK AS INDICATED IN THE BIDDING DOCUMENTS FOR THE BID PRICE AND WITHIN THE BID TIMES INDICATED IN THIS BID AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE CONTRACT DOCUMENTS.

1.01 ACKNOWLEDGMENTS

IN SUBMITTING THIS BID, THE BIDDER REPRESENTS THAT:

A. This Bid will remain open for acceptance for a period of 90 days from the Bid opening date;

B. The Owner has the right to reject this Bid;

C. The Bidder accepts the provisions of the Instructions and Supplementary Instructions to Bidders regarding the disposition of the Bid;

D. The Bidder agrees to sign and submit the Agreement and other documents required by the Bidding Requirements within 15 days after the Owner's Notice of Award;

E. The Bidder has examined the complete set of Bidding Documents;

F. The Bidder has visited the site and become familiar with the general, local, and site conditions;

G. The Bidder is familiar with Federal, State and Local Laws and Regulations;

H. The Bidder has correlated the information known to the Bidder; information and observations obtained from visits to the site, reports and drawings identified in the Bidding Documents and additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. This Bid is genuine and not made in the interest of or on behalf of an undisclosed person, firm, or corporation and is not submitted in conformity with an Agreement or rules or group, association, organization, or corporation;

J. The Bidder has not directly or indirectly induced or solicited another Bidder to submit a false or sham Bid; sought by collusion to obtain for itself an advantage over another Bidder or over the Owner;

K. The Bidder has received the following Addenda, receipt of which is hereby acknowledged:

1. Addendum No. _____Date _____

2. Addendum No. _____Date _____

3. Addendum No. _____Date _____

THE BIDDER UNDERSTANDS THAT, IN SUBMITTING THIS BID, HE WAIVES ALL RIGHT TO PLEAD ANY MISUNDERSTANDINGS REGARDING THE FOREGOING.

1.02 SINGLE CONTRACT - BASE BID PRICE:

A. Refer to Section 01 10 00 - Summary.

B. The Bidder will complete the Work of the Project in accordance with the Contract Documents for the following price:

1. Stipulated Sum Bid Price:

2. _____
(Use Numerals)

3. _____
(Use Words)

1.03 BID BOND

A. The Bidder has attached the required bid security in the form described by Document 00 43 13 - Bid Security Form with this Bid.

1.04 CONTRACT TIME

A. The Bidder agrees to begin and complete Work as indicated in Document 00 31 13 - Preliminary Schedule.

1.05 OTHER BID FORM SUPPLEMENTS

A. The following additional Documents are attached to and made a condition of this Bid:
   1. Document 00 43 13 - Bid Security Form.
   2. Forms as required in Oakton Community College Invitation to Bid #1212-22-01.

1.06 SIGNATURES

A. Respectfully submitted this _____ day of _____, 20____.

B. Type of Firm: (check one)

_____ Individual

_____ Partnership

_____ Corporation

_____ Joint Venture

C. Corporate Seal:(SEAL)

D. Full name of firm: _____

E. Authorized Signing Officer: _____

Title: _____

F. Authorized Signing Officer: _____

Title: _____

END OF DOCUMENT

SECTION 00 43 13
BID SECURITY FORM

1.01 FORM OF BID BOND

A. AIA Document A310 (2017 Edition) - Bid Bond Form.

B. The above document may be examined at the Architect/Engineer's office or purchased at the American Institute of Architects, http://www.aia.org/contractdocs/.

END OF DOCUMENT

SECTION 00 52 00
AGREEMENT FORM

1.01 FORM OF AGREEMENT

A. AIA Document A101, Owner-Contractor Agreement Form - Stipulated Sum (2017 Edition), forms the basis of Contract between the Owner and Contractor.

B. The above document may be examined at the Architect's office or purchased at the American Institute of Architects, http://www.aia.org/contractdocs/.

1.02 RELATED REQUIREMENTS

A. Document 00 72 00 - General Conditions.

B. Document 00 73 00 - Supplementary Conditions.

END OF DOCUMENT

SECTION 00 72 00
GENERAL CONDITIONS

1.01 FORM OF GENERAL CONDITIONS

A. The General Conditions applicable to this contract is attached following this page.

B. AIA Document A201 - 2017 "General Conditions of the Contract for Construction" is the General Conditions between the Owner and Contractor.

C. The above document may be examined at the Architect's office or purchased at the American Institute of Architects, http://www.aia.org/contractdocs/.

1.02 RELATED REQUIREMENTS

A. SECTION 00 73 00 - Supplementary Conditions.

1.03 SUPPLEMENTARY CONDITIONS

A. Refer to Document 00 73 00 for amendments to these General Conditions.

END OF DOCUMENT

SECTION 00 73 00
SUPPLEMENTARY CONDITIONS

1.01 GENERAL

A. The Supplementary Conditions contain modifications and additions to AIA Document A201 - 2017 "General Conditions of the Contract for Construction". Where a portion of the General Conditions is modified, deleted or voided by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

B. The Owner's Document entitled "General Conditions For Construction And Maintenance Work At Oakton Community College, Des Plaines And Ray Hartstein Campuses" contains further modifications and additions to AIA Document A201 - 2007 "General Conditions of the Contract for Construction". Where a portion of the General Conditions is modified, deleted or voided by this Document, the unaltered portions of the General Conditions shall remain in effect. Where the provisions of the Owner's Document conflict with the provisions of AIA Document A201 or these Supplementary Conditions, the Owner's Document provisions shall prevail.

1.02 ARTICLE 1 GENERAL PROVISIONS

A. **1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**

1. Add new Section 1.2.2.1 as follows:

"**§ 1.2.2.1** Sections of Division 1 - General Requirements govern the execution of the Work of all Sections of the specifications."

B. **1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE**

1. After the first sentence of Section 1.5.1, insert the following:

"These Instruments of Service are the tangible rendering of professional opinions and service for the Owner and are not, therefore, a commodity, product or good. No warranties, express or implied, are made by the Architect to the Contractor concerning those Instruments of Service."

1.03 ARTICLE 2 OWNER

A. **2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

1. Delete the third sentence of Section 2.2.1.
2. Delete Section 2.2.5 in its entirety and replace with the following:

"**§ 2.2.5** The Owner shall furnish to the Contractor one (1) PDF copy of the Contract Documents for the purposes of making reproductions pursuant to Section 1.5.2."

B. Add new Section 2.5 as follows:

"**§ 2.5 OWNER'S REMEDIES NOT EXCLUSIVE**

2.5.1 The rights and remedies of Owner stated in this Article 2 shall be in addition to and not in limitation of any other rights of the Owner granted in the Contract Documents or at law or in equity."

1.04 ARTICLE 3 CONTRACTOR

A. **3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTACTOR**

1. Delete Section 3.2.1 in its entirety and replace with the following:

"**§ 3.2.1** Execution of the Contract by the Contractor is a representation by the Contractor that, prior to the submission of its bid, the Contractor (a) has visited and examined the Project site and is familiar with all of the conditions thereon; (b) has examined the nature, location and character of the general area in which the Project is located, including, without limitation, its climactic conditions, available labor supply, labor costs and available equipment supply and costs; and (c) has examined the quality and quantity of materials, supplies, tools, equipment, labor and professional services necessary to complete the Work in the manner and within the cost and time frame required by the Contract Documents."

2. Delete Section 3.2.3.
3. Add new Section 3.2.5 as follows:

"**§ 3.2.5** Prior to any excavation, the Contractor shall determine the locations of all existing water, gas, sewer, electric, telephone, telegraph, television, irrigation, petroleum pipelines, and other underground utilities and structures. Where the locations of existing underground and surface utilities and structures are indicated, these locations are generally approximate, and all items that may be encountered during the work are not necessarily indicated. The Contractor shall determine the exact locations of all items indicated, and the existence and locations of all items not indicated."

B. **3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

1. Add new Sections 3.3.4 through 3.3.7 as follows:

"**§ 3.3.4** The Contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions and that they provide materials on time. The Contractor shall coordinate its Work, including without limitation, deliveries, storage, installations, and construction utilities with that of all others on the Project. The Contractor shall be responsible for the space requirements, locations, and routing of its equipment. In areas and locations where the proper and most effective space requirements, locations and routing cannot be made as indicated, the Contractor shall meet with all others involved, before installation, to plan the most effective method of overall installation.

3.3.5 All manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, unless herein specified to the contrary.

3.3.6 After commencing the work, the Contractor shall use every precaution to avoid interferences with existing underground and surface utilities and structures, and protect them from damage. The Contractor shall repair or pay for all damage caused by his operations to all existing utility lines, public property, and private property, whether it is below ground or above ground, and he shall settle in total cost of all damage suits which may arise as a result of his operations at no additional costs to the Owner. To avoid unnecessary interferences or delays, the Contractor shall coordinate all utility removals, replacements and construction with the appropriate utility company. The cost of temporarily relocating utilities for convenience of the Contractor, shall be paid by Contractor.

3.3.7 The Contractor shall establish and maintain benchmarks and all other grades, lines, and levels necessary for the Work, report errors or inconsistencies to the Owner and Architect before commencing Work, and review the placement of the building and permanent facilities on the site with the Owner and Architect after all lines are staked out and before foundation Work is started."

C. **3.4 LABOR AND MATERIALS**

1. Delete Section 3.4.2 in its entirety and replace with the following:

   "**§ 3.4.2** After the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Section 01 60 00)."

2. Add new Section 3.4.4 as follows:

   "**§ 3.4.4** The Contractor and each Subcontractor shall pay not less than the general prevailing rate of hourly wages for work of a similar character in the locality in which the work is performed and not less than general prevailing rate of hourly wages for legal holidays and overtime work in the performance of work under this Contract, as established by the Illinois Department of Labor, pursuant to an act of the General Assembly of the State of Illinois. In accordance with applicable law, Contractor and each Subcontractor shall keep an accurate record showing the names and occupation of all laborers, workers and mechanics employed by them, and also showing the actual hourly wages paid to each such individual, which record shall be open at all reasonable hours to inspection by the Owner, its officers and agents, and to agents of the Illinois Department of Labor. The Contractor and each Subcontractor hereby agree, jointly and severally, to defend, indemnify and hold harmless the Owner from any and all claims, demands, liens or suits of any kind or nature whatsoever (including suits for injunctive relief) by the Illinois Department of Labor under the Illinois Prevailing Wage Act, or by any laborer, worker or mechanic employed by the Contractor or the Subcontractor who alleges that he has been paid for his services in a sum less than prevailing wage rates required by Illinois law. The Owner agrees to notify the Contractor or Subcontractor of the pendency of any such claim, demand, lien or suit. Contractor must pay prevailing wages in effect at time labor is performed."

D. **3.6 TAXES**

1. Delete Section 3.6 in its entirety and replace with the following:

   "**§ 3.6 TAXES**

   The Owner is exempt from the Illinois Use Tax Act and the Retailer's Occupation Tax. Any taxes for which the Owner is not exempt shall be paid by the Contractor." The College is tax exempt. Certificate to be furnished upon request.

E. **3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS**

1. Delete Section 3.7.4 in its entirety.

F. **3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

1. Delete Section 3.10.1 in its entirety and replace with the following:

   "§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall indicate the proposed completion dates for the various subdivisions of the Work, as well as the totality of the Work. The schedule shall be updated every thirty (30) days and submitted to Architect with Contractor's Applications for Payment. Each schedule shall contain a comparison of actual progress with the estimated progress for such point in time stated in the original schedule. If any schedule submitted sets forth a date for Completion for the Work or any phase of the Work beyond the date(s) of Completion established in the Contract (as the same may extended as provided in the Contract Documents), then Contractor shall submit to Architect and Owner for their review and approval a narrative description of the means and methods which Contractor intends to

employ to expedite the progress of the Work to ensure timely completion of the various phases of the Work as well as the totality of the Work. To ensure such timely completion, Contractor shall take all necessary action including, without limitation, increasing the number of personnel and labor on the Project and implementing overtime and double shifts. In that event, Contractor shall not be entitled to an adjustment in the Contract Sum of the schedule. The Owner may, in its discretion, choose to withhold any payment due the Contractor until an updated schedule is submitted. The Owner's or Architect's failure to object to a submitted schedule that exceeds time limits current under the Contract Documents shall not relieve the Contractor of its obligations to meet the time limits in the Contract Documents, nor shall it make the Owner or Architect liable for any of the Contractor's damages incurred as a result of increased construction time or not meeting the time limits in the Contract Documents. Similarly, the Owner's or Architect's failure to object to a Contractor's schedule showing completion in advance of the time limits in the Contract Documents shall not create or infer any rights in favor of the Contractor for acceleration of the Work."

G. **3.18 INDEMNIFICATION**

1. Delete Section 3.18.1 and replace with the following:

"**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall waive any right of contribution against the Owner and shall indemnify and hold harmless the Owner and the Architect and their officers, officials, employees, volunteers and agents from and against all claims, damages losses and expenses, including, but not limited to, legal fees (attorney's and paralegal's fees, expert fees and court costs), arising out of or resulting from the performance of the Contractor's work provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of property, other than the work itself, including the loss of use resulting therefrom to the extent it is caused in whole or in part by any wrongful or negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which the Owner would otherwise have. The Contractor shall similarly, protect, indemnify and hold and save harmless, the Owner, its officers, officials, employee, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including, but not limited to, legal fees, incurred by reason of Contractor's breach of any of its obligations under, or Contractor's default of any provisions of the Contract."

2. Add new Section 3.18.1.1 as follows:

"**§ 3.18.1.1** The Contractor and every subcontractor expressly waive all so-called Kotecki rights under the Illinois workers' compensation statutes even though owner has retained all such rights."

1.05 ARTICLE 7 CHANGES IN THE WORK

A. **7.1 GENERAL**

1. Add new Section 7.1.4 as follows:

"**§ 7.1.4** For adjustments to the Contract Sum based on other than the unit price method, overhead, profit and general conditions combined shall be calculated at the following percentages of the cost attributable to the change in the work:

.1 For the Contractor, for any Work performed by the Contractor's own forces: 10 percent of the cost.

.2 For the Contractor, for Work performed by his Subcontractor: 5 percent of the amount due the Subcontractor.

.3 For each Subcontractor or Sub-subcontractor involved, for any Work performed by the Subcontractor's own forces: 10 percent of the cost.

.4 For each Subcontractor, for Work performed by his sub-contractors: 5 percent of the amount due the Sub-subcontractor.

.5 All proposals, except those less than $200.00, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontracts, they shall be itemized also. In no case will a change involving over $200.00 be approved without such itemization."

B. **7.3 CONSTRUCTION CHANGE DIRECTIVES**

1. In the first sentence of Section 7.3.7, delete the words: "as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount." and replace with the words: "in accordance with Section 7.1.4".

1.06 ARTICLE 9 PAYMENTS AND COMPLETION

A. **9.3 APPLICATIONS FOR PAYMENT**

1. Add new Section 9.3.1.3 as follows:

   "**§ 9.3.1.3** Until substantial completion, the Owner shall pay 90 percent of the amount due the Contractor on account of progress payments."

2. Add new Section 9.3.2.1 as follows:

   "**§ 9.3.2.1** In accordance with Section 9.3.2, the Contractor shall be permitted to make written petition to the Owner requesting payment for 75% of the cost of materials and equipment suitably stored off the site at a location agreed upon in writing between the Owner and the Contractor. In order to receive such payment, title to the materials and/or equipment must pass to the Owner; the materials and/or equipment must be stored in a protected, insured facility agreed to by the Owner, with the Owner named as an additional insured; and all storage costs and costs associated with handling and transporting the materials and/or equipment to the Project site must be paid for by the Contractor."

B. **9.8 SUBSTANTIAL COMPLETION**

1. Delete the last sentence of Section 9.8.5 and replace with the following: "The payment shall be sufficient to increase the total payments to 95 percent of the Contract sum, less such amounts as the Architect shall determine for incomplete Work and unsettled claims."

C. **9.10 FINAL COMPLETION AND FINAL PAYMENT**

1. Delete Section 9.10.4 in its entirety.

D. Add the following Section 9.11 and Sections 9.11.1, 9.11.2 and 9.11.3:

"**§ 9.11 ACTUAL AND LIQUIDATED DAMAGES**

9.11.1 The Owner will assess liquidated damages of $1000.00 per day for each calendar day the Work or any portion thereof remains incomplete beyond the date of Substantial Completion set forth in the Contract. The Contractor and the Contractors' surety shall be liable for and shall pay the Owner the total liquidated damages assessed by the Owner.

9.11.2 The parties further agree that actual damages are hard for a public entity such as the Owner to estimate for the inconvenience of not having its public improvement and that a per-day amount of $1,000.00 per day is a reasonable and fair amount for such inconvenience.

Because the amount is fair, the parties agree that liquidated damages of $1,000.00 per day is not a penalty or a spur to the Contractor.

9.11.3 In addition to the damages in Section 9.11.1, the following apply:

.1 Failure of the Contractor to achieve Completion of Work by the date of Substantial Completion set forth in the Contract will result in the Contractor being responsible to the Owner for any additional Architect's Fees paid by the Owner for Architectural services necessitated by the Contractor's failure.

.2 If more than one inspection for Completion of the Work is required the Contractor shall be responsible to the Owner for additional Architectural fees for additional inspections by the Architect.

.3 The Owner may be liable to the Architect for fees to cover all time spent by the Architect relative to the Work. Additional fees can include but are not limited to the following: site visits and inspections, report preparation for the Owner, meeting attendance requested by the Owner, phone calls, and all time deemed necessary by the Owner and Architect for satisfactory completion of the project. Any additional fees paid by the Owner will be deducted from the amount due the Contractor."

1.07 ARTICLE 11 INSURANCE AND BONDS

A. 11.1 CONTRACTOR'S LIABILITY INSURANCE

1. Delete the semicolon at the end of Clause 11.1.1.1 and append the following: ", including private entities performing work at the site and exempt from the coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the project;"
2. Delete the semicolon at the end of Clause 11.1.1.2 and append the following: ", or persons or entities excluded by statute from the requirements of Clause 11.1.1.1 but required by the contract documents to provide the insurance required by that clause;"
3. Delete the semicolon at the end of Clause 11.1.1.6 and append the following: ", and coverage should be written on a comprehensive automobile policy which will include coverage for owned, non-owned and hired motor vehicles."
4. Add new Section 11.1.2.1 as follows:

"**§ 11.1.2.1** The insurance required by Section 11.1.1 shall be written for not less than the following limits, or greater if required by law:

1) Workers' Compensation:
   a) State: Statutory Limit.
   b) Applicable Federal (e.g., Longshoremen's): Statutory
   c) Employer's Liability
      (1) $500,000.00 Per Accident
      (2) $500,000.00 Disease, Policy Limit
      (3) $500,000.00 Disease, Each Employee
2) If written under Comprehensive General Liability Policy Form (including sub-lines specified in Clause 11.1.1.8):
   a) Bodily Injury:
      (1) $1,000,000.00 Per Occurrence
      (2) $2,000,000.00 Aggregate Per Project
   b) Property Damage:
      (1) $500,000.00 Per Occurrence
3) If written under Commercial General Liability Policy Form:

a) $2,000,000.00 General Aggregate Per Project
b) $1,000,000.00 Products Completed Operations Aggregate
c) $1,000,000.00 Personal and Advertising Injury
d) $1,000,000.00 Per Occurrence

4) Business Automobile Liability (including owned, non-owned and hired vehicles):
   a) Bodily Injury and Property Damage Combined:
      (1) $1,000,000.00 Per Occurrence
5) Catastophe (Umbrella):
   a) $3,000,000.00 - Liability insurance may be used to satisfy limits."

5. Add new Sections 11.1.2.2 through 11.1.2.6 as follows:

"**§ 11.1.2.2** Liability insurance should be written on the comprehensive general liability basis, and shall include, but not be limited to the following sub-lines:

1) Premises and Operations including x, c, u coverages (explosion, collapse, underground).
2) Products and Completed Operations.
3) Independent Contractor's Protective.
4) Broad Form Comprehensive General Liability Endorsement:
   a) Contractual Liability, including contractors obligation under Section 3.18.
   b) Personal Injury & Advertising Injury Liability
   c) Premises Medical Payments
   d) Host Liquor Law Liability
   e) Fire Legal Liability - Real Property
   f) Broad Form Property Damage Liability (including completed Operations)
   g) Incidental Medical Malpractice Liability
   h) Non-owned Watercraft Liability
   i) Limited Worldwide Liability
   j) Additional Persons Insured, including employees for personal and advertising injury.
   k) Extended Bodily Injury Liability
   l) Automatic Coverage - Newly acquired Organizations (90 days)

11.1.2.3 If liability insurance is written under the new simplified form Commercial General Liability, the above listed coverages should be included.

11.1.2.4 If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or retroactive date shall predate the contract; the termination date of the policy shall be no earlier than the termination date of coverages required to be maintained after final payment, certified in accordance with Section 9.10.2, and extended period endorsement "Supplemental Tail", must be purchased."

11.1.2.5 All policies of insurance purchased or maintained in fulfillment of Section 11.1.1 shall name the Owner and Architect as additional insureds on a primary and noncontributory basis thereunder.

11.1.2.6 The Contractor shall provide the Owner with the Original policy and shall furnish the Architect with a memorandum copy of said policy. The additional insureds on the Contractor's Liability policy shall be:

Oakton Community College
1600 East Golf Road
Des Plaines, Illinois 60016

KLUBER, INC.
41 W. Benton Street
Aurora, Illinois 60506

6. In Section 11.1.3:
   a. In the second sentence, delete the words "Section 11.1" and replace with the words "Article 11".
   b. Append the following sentence to the end of the Section:
      1) "On the Certificate of Insurance, delete in the cancellation provision the following words, "Endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives"."
7. Add new Section 11.1.3.1 as follows:

   "**§ 11.1.3.1** Failure of the Owner to demand any certificate, policy, endorsement or other evidence of full compliance with the insurance requirements of Article 11 or failure of the Owner to identify a deficiency from evidence that is provided shall not be construed as a waiver of the Contractor's obligation to maintain such insurance. The Contractor agrees that the obligation to provide the insurance required by these documents is solely its responsibility and that this is a requirement which cannot be waived by any conduct, action, inaction or omission by the Owner."
8. Add new Section 11.1.5 as follows:

   "**§ 11.1.5** Nothing contained in the insurance requirements of the Contract Documents is to be construed as limiting the liability of the Contractor, the liability of any Subcontractor or any tier or either of their respective insurance carriers. The Owner, does not in any way, represent that the coverages or limits of insurance specified is sufficient or adequate to protect the Owner, Contractor, Architect, or any Subcontractor's interests or liabilities but are merely at minimums. The obligation of the Contractor, the Architect, and any Subcontractor of any tier to purchase insurance, shall not, in any way, limit their obligations to the Owner in the event the Owner should suffer an injury or loss in excess of the amount recoverable through insurance, or any loss or portion of the loss which is not covered by either the Contractor's or any Subcontractor's insurance."

B. **11.3 PROPERTY INSURANCE**

1. In the last sentence of Section 11.3.1, after "Owner, " insert "the Architect,".
2. Delete Section 11.3.1.2. in its entirety.
3. Delete Section 11.3.1.3. in its entirety.
4. Delete Section 11.3.3 in its entirety.
5. Delete Section 11.3.5 in its entirety.
6. Delete Section 11.3.6 in its entirety.
7. Delete Section 11.3.7 in its entirety.
8. In the third sentence of Section 11.3.9 delete the phrase ", or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor.".

C. **11.4 PERFORMANCE AND PAYMENT BOND**

1. Delete Section 11.4.1 in its entirety and replace with the following:

   "**§ 11.4.1** The Contractor, before commencing the Work, shall furnish a Performance Bond and a Labor and Material Bond. The Performance Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the faithful performance of the

obligation of the Contract Documents, and the Labor and Material Payment Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the payment of all persons performing labor and furnishing materials in connections with the Contract Documents. Such bonds shall be on standard AIA Documents, issued by the American Institute of Architects, shall be issued by a surety satisfactory to the Owner, and shall name the Owner as primary co-obligee.

11.4.1.1 The Contractor shall deliver the required bonds to the Owner not later than three days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds shall be furnished.

11.4.1.2 The Contractor shall require the attorney-in-fact who executed the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney."

2. Add new Section 11.4.3 as follows:

"**§ 11.4.3** Whenever the Contractor shall be and is declared by Owner to be in default under the Contract, the Surety and the Contractor are each responsible to make full payment to the Owner or any and all extra Work incurred by the Architect as a result of the Contractor's default, and to pay to Owner all attorney's fees and court costs incurred by Owner as a result of the Contractor's default, and in protecting Owner's rights under the Agreement to remedy Contractor's default."

3. Add new Section 11.4.4 as follows:

"**§ 11.4.4** The Contractor shall (i) furnish all Surety Company's bonds through Surety Company's local agents approved by and/or as directed by Owner; (ii) fully covered and guarantee with said bond the faithful performance and completion of the entire Contract, including without limitation, the faithful performance of prevailing wage requirements; and (iii) guarantee with said bond payment in all cases by the Contractor or by the Surety Company for all labor performed, material and supplies furnished with the entire Work in the Contract. Said Bond shall remain in full force and effect during the entire period of all general guarantees given by the Contractor with the Contract as called for in the Specifications and Contract, except in cases where other bonds are specifically called for in the specifications and Contract in connection with special guarantees."

D. Add new Section 11.5 as follows:

"**§ 11.5 OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE**

11.5.1 The Contractor shall purchase and maintain Owners and Contractors Protective (OCP) liability insurance covering the Owner's contingent liability for claims which may arise from operations under the Contract and that will protect the Owner and the Architect and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the work specifically pertaining to the Illinois Structural Works Act, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (2) is cause in whole or in part by any negligent act of omission of the Contractor, and Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, including by assignment, regardless of whether or not it is caused in part by a party to whom insurance is afforded pursuant to this paragraph. The minimum Per Occurrence and Aggregate limits of liability purchased for such coverage shall be equal, respectively, to the Per Occurrence and Aggregate limits required for the Contractor's Liability insurance, as listed

in Section 11.1.2.1, above.

11.5.2 In any and all claims against the Owner or the Architect or any of their agents or employees by any employee of the Contractor, any other contractor assigned to the Contractor, Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.

11.5.3 The insurance obligations of the Contractor under this Section shall not extend to the liability of the Architect, his agents or employees arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications or (2) the giving of or failure to give directions or instruction by the Architect, his agents or employees provided that such giving or failure to give is the primary cause of the injury damage.

11.5.4 The Contractor shall provide the Owner with the Original policy and shall furnish the Architect with a memorandum copy of said policy. The named insured on the Owners and Contractors Protective (OCP) liability policy shall be:

Oakton Community College
1600 East Golf Road
Des Plaines, Illinois 60016

KLUBER, INC.
41 W. Benton Street
Aurora, Illinois 60506

1.08 ARTICLE 13 MISCELLANEOUS PROVISIONS

A. **13.6 INTEREST**

1. Delete Section 13.6 in its entirety. All references to interest payments throughout the Contract Documents are hereby voided.

B. Add Section 13.8 as follows:

"**§ 13.8 REGULATIONS**

13.8.1 The Contractor or Subcontractor warrants that he is familiar with and he shall comply with Federal, State and local laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Contract including without limitation Workmen's Compensation Laws, minimum salary and wage statutes and regulations, laws with respect to permits and licenses and fees in connection therewith, laws regarding maximum working hours. No plea of misunderstanding or ignorance thereof will be considered.

13.8.2 Whenever required, the Contractor or Subcontractor shall furnish the Architect and Owner with satisfactory proof of compliance with said Federal, State and local laws, statutes, ordinances, rules, regulations, orders, and decrees.

13.8.3 Each bidder shall carefully examine the Occupational Safety and health Act as issued by the Federal Register (OSHA), and the specific regulations governing procedures, techniques, safety precautions, equipment design, and the configuration of the same as required under this Act and each bidder agrees as evidenced by his submission of a bid to comply with all terms of the Act and to perform and complete in a workmanlike manner all work

required in full compliance with said Act.

13.8.4 Each bidder agrees as evidenced by his submission of a bid to comply with all terms of the Equal Employment Opportunity Clause of the Illinois Fair Employment Practices Commission.

13.8.5 At all times Contractor shall remain in compliance with the Illinois Public Works Employment Discrimination Act (775 ILCS 10/1, et seq.,) and the Illinois Human Rights Act (775 ILCS 5/2-101, et seq.,) and in addition shall at all times comply with Section 2-105 of the Illinois Human Rights Act.

13.8.6 By execution of this Contract, the Contractor understands, represents and warrants to the Owner that the Contractor and its Subcontractors (for which the Subcontractor takes responsibility to insure that they comply with the above-mentioned Acts) are in compliance with all requirements provided by the Acts set forth in Article 13 and that they will remain in compliance for the entirety of the Work. A violation of any of the Acts set forth in this Article is cause for the immediate cancellation of the Contract. However, any forbearance or delay by the Owner in canceling this Contract shall not be considered as, and does not constitute, Owner's consent to such violation and a waiver of any rights the Owner may have, including without limitation, cancellation of this Contract."

1.09 ARTICLE 15 CLAIMS AND DISPUTES

A. **15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES**

1. Delete Section 15.1.6 in its entirety.

B. **15.2 INITIAL DECISION**

1. Delete Section 15.2.1 in its entirety and replace with the following:

"**§ 15.2.1** Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9 and 11.3.10, may be referred to the Initial Decision Maker for action. A decision by the Initial Decision Maker shall not be binding and shall not be required as a condition precedent to litigation."

END OF SECTION

SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: RAY HARTSTEIN CAMPUS DOMESTIC WATER PRESSURE BOOSTER SYSTEM.

B. Owner's Name: Oakton Community College.

C. Architect/Engineer's Name: Kluber Architects + Engineers.

D. The Project consists of the construction of replacement of campus domestic water pressure booster system. Work includes plumbing, electrical and controls interface into campus building automation system. Work shall require construction over a weekend.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 52 00 - Agreement Form.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of demolition and removal work is indicated on drawings.

B. Scope of alterations work is indicated on drawings.

C. Plumbing: Replace existing system with new construction.

D. Electrical Power and Lighting: Alter existing and add new construction.

1.04 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.

B. Arrange use of site and premises to allow:
   1. Owner occupancy.
   2. Use of site and premises by the public.

C. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

D. Existing building spaces may not be used for storage.

E. Utility Outages and Shutdown:

1. Limit disruption of utility services to hours the building is unoccupied.
2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
3. Prevent accidental disruption of utility services to other facilities.

1.06 WORK SEQUENCE

A. Coordinate construction schedule and operations with Owner.

B. Construction shall require work over a weekend.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Sum and Contract Time.

C. Change procedures.

D. Correlation of Contractor submittals based on changes.

E. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions and Document 00 73 00 - Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.

B. Section 00 73 00 - Supplementary Conditions: Percentage allowances for Contractor's overhead and profit.

C. Section 01 78 00 - Closeout Submittals: Project record documents.

1.03 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.

B. Forms filled out by hand will not be accepted.

C. Submit Schedule of Values to the Architect/Engineer at earliest possible date, but no later than 14 days prior to first Pay Request Meeting.
   1. After review by the Architect/Engineer, revise and resubmit Schedule as directed.

D. Format: Utilize the Table of Contents of this Project Manual as a format for the listing of the Work.

E. Identify as separate line items on the Schedule the costs for the following items:
   1. Bonds.
   2. Insurance.
   3. Site Mobilization.
   4. Construction Submittals.
   5. General Conditions.
   6. Demonstration and Training.
   7. Closeout Submittals

F. Submit Schedule of Values in sufficient detail for the Architect/Engineer to use in evaluation of Applications for Payment.
   1. Itemize the cost of the work of:
      a. Contractor's own labor forces.
      b. Subcontractors.
      c. Suppliers of products and equipment.

G. Revise Schedule of Values to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.

C. Forms filled out by hand will not be accepted.

D. For each item, provide a column for listing each of the following:
   1. Item Number.
   2. Description of work.
   3. Scheduled Values.
   4. Previous Applications.
   5. Work in Place and Stored Materials under this Application.
   6. Authorized Change Orders.
   7. Total Completed and Stored to Date of Application.
   8. Percentage of Completion.
   9. Balance to Finish.
   10. Retainage.

E. Execute certification by signature of authorized officer.

F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.

H. Submit one pencil/draft copy of each Application for Payment to the Architect/Engineer at least 7 days prior to the due date for the submission of the Application.

I. Contractor or Architect/Engineer may schedule a Pay Request Meeting to review the pencil/draft copy of the Application for agreement with the progress of the Work.

J. After receipt of Architect/Engineer's review comments, submit three final copies, signed and notarized, of each Application for Payment.

K. Include the following with the application:
   1. Transmittal letter as specified for submittals in Section 01 30 00.
   2. Construction progress schedule, revised and current as specified in Section 01 30 00.
   3. Contractor's partial waiver of lien in the amount of the Application for Payment as well as trailing partial waivers of lien for subcontractors and suppliers who were included in the previous Application for Payment, to the extent of that payment.
      a. When an Application shows completion of a subcontractor or supplier item, submit a final or full waiver for that item.
      b. Waivers of lien shall be submitted on forms and executed in a manner acceptable to the Owner.
   4. Certified payroll records for the Contractor and for all Subcontractors and Sub-subcontractors employed on the Project who performed work on the Project during the Payment Period.
      a. Contractor shall assemble his and all subcontractor and sub-subcontractor records prior to submitting each Application for Payment.

b. Applications for Payment submitted without certified payroll records or with incomplete certified payroll records will result in payment being delayed until the Contractor complies fully with the requirements set forth in the preceding paragraphs.

5. Affidavits attesting to products or equipment suitably stored off-site in a bonded warehouse. Payments for materials stored off-site shall be conditioned upon submission of bills of sale, applicable insurance, and any other documentation or procedures satisfactory to the Owner to establish the Owner's title to such materials, or otherwise protect the Owner's interest.

L. When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to the Contract Documents.

B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect/Engineer will issue instructions directly to Contractor.

C. For other required changes, Architect/Engineer will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

D. For changes for which advance pricing is desired, Architect/Engineer will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within ten (10) days.

E. Contractor may propose a change by submitting a request for change to Architect/Engineer, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.

F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
   1. For change requested by Architect/Engineer for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
   2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect/Engineer.
   3. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.
   4. For change ordered by Architect/Engineer without a quotation from Contractor, the amount will be determined by Architect/Engineer based on the Contractor's substantiation of costs as specified for Time and Material work.

G. Substantiation of Costs: Provide full information required for evaluation.

1. On request, provide the following data:
   a. Quantities of products, labor, and equipment.
   b. Taxes, insurance, and bonds.
   c. Overhead and profit.
   d. Justification for any change in Contract Time.
   e. Credit for deletions from Contract, similarly documented.
2. Support each claim for additional costs with additional information:
   a. Origin and date of claim.
   b. Dates and times work was performed, and by whom.
   c. Time records and wage rates paid.
   d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

H. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

K. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:
   1. All closeout procedures specified in Section 01 70 00.

C. The submittal of Final Waiver of Lien and the acceptance of the final payment by the Contractor shall be held to be a waiver of any and all claims against the Owner arising from, out of, or in any connection with the Contract.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preconstruction meeting.

B. Progress meetings.

C. Construction progress schedule.

D. Submittals for review, information, and project closeout.

E. Architect/Engineer-provided CAD files.

F. Number of copies of Submittals.

G. Requests for Interpretation (RFI) procedures.

H. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions: Dates for applications for payment.

B. Section 01 60 00 - Product Requirements: General product requirements.

C. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.

D. Section 01 78 00 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Conform to requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect/Engineer:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Manufacturer's instructions and field reports.
   5. Applications for payment and change order requests.
   6. Progress schedules.
   7. Coordination drawings.
   8. Correction Punch List and Final Correction Punch List for Substantial Completion.
   9. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

A. Owner will schedule a meeting after Notice of Award.

B. Attendance required:
   1. Owner.
   2. Architect/Engineer.
   3. Contractor.
   4. Contractors of major trades as invited to attend meeting.

C. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   5. Designation of personnel representing the parties to Contract and .
   6. Procedures and processing of field decisions, Submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   7. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect/Engineer, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work at maximum weekly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect/Engineer.
   4. Contractor's superintendent.
   5. Major subcontractors.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of Submittals schedule and status of Submittals.
   6. Review of RFIs log and status of responses.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Maintenance of quality and work standards.
   11. Effect of proposed changes on progress schedule and coordination.
   12. Other business relating to work.

E. Record minutes and distribute copies within 2 days after meeting to participants, with copies to Architect/Engineer, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

A. Within 7 days after date of the Agreement, submit preliminary schedule.

B. If preliminary schedule requires revision after review, submit revised schedule within 7 days.

C. Submit updated schedule with each Application for Payment.

3.04 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in the Contract Documents.
   2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of the Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
      a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
      b. Do not forward requests which solely require internal coordination between subcontractors.
   2. Prepare in a format and with content acceptable to Owner.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
   1. Include in each request Contractor's signature attesting to good faith effort to determine from the Contract Documents information requiring interpretation.
   2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
      a. Approval of submittals (use procedures specified elsewhere in this section).
      b. Approval of substitutions (see Section - 01 60 00 - Product Requirements)
      c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
      d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
   3. Improper RFIs: Requests not prepared in conformance to requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
   4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, the Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
      a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect/Engineer, and any of its consultants, due to processing of such RFIs.

E. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
   1. Indicate current status of every RFI. Update log promptly and on a regular basis.
   2. Note dates of when each request is made, and when a response is received.
   3. Highlight items requiring priority or expedited response.
   4. Highlight items for which a timely response has not been received to date.
   5. Identify and include improper or frivolous RFIs.

F. Review Time: Architect/Engineer will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
   1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

G. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
   1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
   2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
   3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
   4. Notify Architect/Engineer within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.05 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.

B. Submit to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. After review, provide copies and distribute in accordance with Submittal PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

3.06 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at Project Closeout:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.

5. Other types as indicated.

D. Submit for Owner's benefit during and after Project completion.

3.07 ARCHITECT/ENGINEER-PROVIDED CAD FILES

A. After the execution of the Contract, Architect/Engineer will provide, free of charge, upon receipt of a properly completed and signed request utilizing “Electronic Data Transfer Consent Form” at the end of this Specification Section, CAD files depicting graphic information for the project as follows:
   1. Architectural Floor Plans: Column grid, walls, floors, stairs, doors, windows, room numbers, ceiling grid, mechanical diffusers, plumbing fixtures, sprinkler heads (if depicted in Bid Documents) and lights.

B. Contractor acknowledges and accepts that the Architectural Floor Plans do not contain structural, mechanical, electrical, plumbing, fire protection and other building systems information depicted in the Bidding Documents. Examples of information not contained in these files include, but are not limited to, title blocks, keynotes, schedules, mechanical ductwork and equipment, electrical device symbols, circuit numbers and home runs, plumbing equipment, piping runs and riser diagrams, and architectural/engineering text or details. No other CAD files, data or information will be provided.

C. Only requests from Prime Contractors will be honored. Subcontractors must obtain the files from their respective Prime Contractors.

D. In submitting a request, Contractor acknowledges that:
   1. Architect/Engineer bears no responsibility for the data or its transmission,
   2. Use of the data by the Contractor or his Subcontractors in no way relieves the Contractor of his obligations under the Contract,
   3. Contractor is solely liable for any and all claims arising from any and all products generated by the Contractor or its Subcontractors employing the data,
   4. Contractor and its Subcontractors have a limited, non-exclusive license to use the data solely in connection with the Work of the Project, and that
   5. Architect/Engineer retains all rights, including copyright, to the data.

3.08 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

3.09 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a single transmittal for related items.
   2. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
   3. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
   4. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
   5. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
      a. Send submittals in electronic format via email to Architect/Engineer.

6. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
7. Provide space for Contractor and Architect/Engineer review stamps.
8. When revised for resubmission, identify all changes made since previous submission.
9. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
10. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
11. Submittals not requested will be recognized, and will be returned "Not Reviewed",

B. Product Data Procedures:
1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related work.
2. Do not reproduce the Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. The Contractor is entitled to 1 Resubmittals of any Shop Drawing, Product Data, or Closeout Submittal item rejected by the Architect or returned by the Architect for further action. Thereafter, the Contractor shall pay the cost of all further Architect's reviews of Shop Drawing, Product Data or Closeout Submittal, at a rate of $200.00/hour. Cost of such further reviews will be deducted from the Contract Sum by Change Order.

E. Submittal reviews may be delayed and/or Submittals may be returned unreviewed for any of the following reasons:
1. Submittals submitted outside the scheduled dates of the Submittal Schedule.
2. Submittals are incomplete or are missing information.
3. Submittals are not submitted in accordance with procedures outlined in this Section (i.e. spec Section number not indicated, missing Contractor's review stamp, submitted items not correlated with specified products).

3.10 SUBMITTAL REVIEW

A. Submittals for Review: Architect/Engineer will review each submittal, and approve, or take other appropriate action.

END OF SECTION

ELECTRONIC DATA TRANSFER CONSENT FORM

Project Name: RAY HARTSTEIN CAMPUS DOMESTIC WATER PRESSURE BOOSTER SYSTEM
7701 LINCOLN AVENUE
SKOKIE, IL 60077

Project No.: 22-315-1447

Owner: OAKTON COMMUNITY COLLEGE

Your Work: _____

KLUBER, INC. (hereinafter referred to as "Kluber") an Illinois corporation, is providing electronic data to you solely at your request and for your convenience. By accepting and opening any of the electronic data files, you agree that Kluber bears no liability for the data or its transmission to you and that you are solely liable for any and all claims referring or relating to any and all products you, or your Subcontractors, may generate with the data.

You acknowledge that you have a limited non-exclusive license to use the information solely in connection with your work on the project captioned above, and that Kluber retains all rights, including copyright, to the data.

Acknowledged by: _____ _____
(Printed Name) (Signature)

Company: _____

Date: _____ Email: _____

Architectural Floor Plans are transmitted for the contractors' use as backgrounds for shop drawings and as-built drawings, and, as such, contain graphic information for column grid, walls, floors, stairs, doors, windows, room numbers, ceiling grid, lights, diffusers and sprinkler heads where indicated on Bid Documents. Plans do not contain title blocks, keynotes, schedules, mechanical ductwork and equipment, electrical device symbols, circuit numbers and home runs, plumbing equipment, piping runs and riser diagrams, and architectural/engineering text and details. Plans depict entire floors and are not formatted, partial plans as depicted in the Bidding Documents. Files are provided in R2013 .DWG format.)

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Control of installation.

C. Manufacturers' field services.

D. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Section 01 41 00 - Regulatory Requirements.

B. Section 01 42 00 - References.

C. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Design Data: Submit for Architect/Engineer's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.

C. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

D. Manufacturer's Field Reports: Submit reports for Architect/Engineer's benefit as contract administrator or for Owner.
   1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.04 REGULATORY REQUIREMENTS - SEE SECTION 01 41 00

1.05 REFERENCES AND STANDARDS - SEE SECTION 01 4200

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have Work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.03 DEFECT ASSESSMENT

A. If, in the opinion of Owner, it is not practical to remove and replace the Work, Owner will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General.

B. Definitions.

C. Quality Assurance.

D. Regulatory Requirements.

1.02 RELATED SECTIONS

A. Section 01 10 00 - Summary.

B. Section 01 42 00 - References.

1.03 GENERAL

A. Comply with all applicable laws, rules, regulations, codes and ordinances.

B. If the Contractor observes that the Contract Documents may be at variance with specified codes, notify the Architect/Engineer immediately. Architect/Engineer shall issue all changes in accordance with the General Conditions.

C. It shall not be the Contractor's primary responsibility to make certain that the Contract Documents are in accordance with all applicable laws, rules and regulations, however, when the Contractor performs work knowing or having reason to know that the work in question is contrary to applicable laws, rules, and regulations, and fails to notify the Architect/Engineer, the Contractor shall pay all costs arising therefrom.

1.04 DEFINITIONS

A. Definitions:
   1. Codes: Codes are statutory requirements, rules or regulations of governmental entities.
   2. Standards: Standards are requirements that have been established as accepted criteria, set general consent.

1.05 QUALITY ASSURANCE

A. The Architect/Engineer has designed the project to applicable code requirements and has copies of said codes available for the Contractor's inspection.

B. The Contractor shall:
   1. Ensure that copies of codes and standards referenced herein or specified in individual specifications sections are available to Contractor's personnel, agents, and Sub-Contractors.
   2. Ensure that Contractor's personnel, agents, and Sub-Contractors are familiar with the workmanship and requirements of applicable codes and standards.

1.06 REGULATORY REQUIREMENTS

A. Source and Requirements: Verify amendments with local code officials.
   1. Local code requirements:

a. ICC International Building Code, 2021 Edition.
b. ICC International Mechanical Code, 2021 Edition.
c. ICC International Fire Code, 2021 Edition.
d. ICC International Property Maintenance Code, 2021 Edition.
e. National Electrical Code, 2020 Edition.

2. State code requirements:
   a. Capital Development Board (CDB):
      1) Illinois Accessibility Code, 2018 Edition.
      2) Illinois Energy Conservation Code (ICC International Energy Conservation Code, 2018 Edition, with State of Illinois modifications.
   b. Illinois Department of Public Health (IDPH):
      1) Illinois Plumbing Code (Illinois Administrative Code, Title 77, Chapter I, Subchapter r, Part 890), 2014 Edition.
   c. Illinois Environmental Protection Agency (IEPA):
      1) Air-Pollution Standards.
      2) Noise Pollution Standards.
      3) Water Pollution Standards.
      4) Public Water Supplies
      5) Solid Waste Standards.
      6) Illinois Recommended Standards for Sewage Works (Illinois Administrative Code, Title 35, Subtitle C, Chapter II, Part 370).
   d. Illinois State Fire Marshal (OSFM):
      1) Illinois Rules & Regulations for Fire Prevention & Safety (as amended).
3. Information and Requirements for Utility Services: Local utility companies.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 42 00
REFERENCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Drawing symbols, abbreviations and acronyms.

B. Definitions of terms used throughout the Contract Documents.

C. Explanation of specification format and content.

D. Requirements relating to referenced standards.

E. Applicability of referenced standards.

F. List of industry organizations and certain of their respective documents.

1.02 DRAWING SYMBOLS AND CONVENTIONS

A. Abbreviations and graphic symbols are defined on the General Notes, Symbols & Abbreviations sheet of the drawings.

B. Generally, symbols used on the mechanical and electrical drawings conform to those recommended by ASHRAE, though, where appropriate, these symbols are supplemented by more specific symbols as recommended by ASME, ASPE, or the IEEE.

1.03 DEFINITIONS

A. Where the terms "indicated", "noted", "scheduled", "shown", or "specified" are used it is to help locate the reference; no limitation on location is intended except as specifically noted.

B. Where the terms "directed", "requested", "authorized", "approved", are used as in "directed by the Architect/Engineer", no implied meaning shall be construed to extend the Architect/Engineer's responsibilities into the Contractor's purview of construction supervision.

C. Where the term "approved" is used in conjunction with the Architect/Engineer's action on submittals, requests or applications it is limited to the duties of the Architect/Engineer as described in the Agreement, and the General and Supplemental Conditions of the Contract. Such use of the term "approval" shall not limit or release the Contractor from his responsibility to fulfill Contract requirements.

D. Where the term "regulations" is used it means all applicable statutes, laws, ordinances, and orders issued by authorities having jurisdiction, as well as construction industry standards, rules, or conventions that address performance of the Work.

E. Where the term "furnish" is used it means supply, deliver, and unload to the construction site ready for assembly and incorporation into the Work.

F. Where the term "install" is used it is meant to describe operations at the job site to include unloading, assembling, placing, anchoring, finishing, protecting, cleaning and all other similar operations required to fully incorporate an item into the Work.

G. Where the term “provide” is used it means “furnish and install” as defined above.

H. The "Project Site" is the space available to the Contractor for performance of construction activities. The Project Site may be for the exclusive use of the Contractor and his activities or may be used in conjunction with others with others performing other construction or related activities on the Project. The Extent of the Project Site is indicated on the Drawings.

I. Where the term "refurbish" is used it means to refinish, repair and otherwise restore to like-new condition.

J. Where the terms "remove" or "demolish" are used they mean safely disconnect from existing utilities, permanently extract from the Work and the Project Site, and legally dispose of off-site.

K. Where the terms "temporarily remove" or "salvage" are used they mean safely disconnect from existing utilities and carefully extract from the Work so as to prevent damage to the item and the Work.

1. Is the item is to be reinstalled or relocated as part of the Work, these terms also mean clean, adjust, lubricate and otherwise restore to best possible condition without repair or refinishing.
2. Otherwise, these terms can also mean clean item surfaces and turn over to the Owner for storage and possible future use.

L. Where the term "reinstall" is used it means the same as "install", with respect to a temporarily removed, salvaged or relocated item.

M. Where the term "relocate" is used it means temporarily remove and reinstall in a new location.

1.04 SPECIFICATION FORMAT AND CONTENT

A. These Specifications are based on the Construction Specification Institute's 49 Division format and numbering system.

B. Language used in the Specifications and other Contract Documents is an abbreviated type. Implied words and meanings will appropriately interpreted.

C. Requirements expressed in imperative and streamlined language are to be performed by the Contractor. At certain locations in the text, subjective language may be used to describe responsibilities that must be fulfilled indirectly by the Contractor or others.

1. Whenever a colon (:) is used within a sentence or phrase, it shall be construed to mean the words "shall be".

D. Use of certain terms such as "carpentry" is not intended to imply that certain activities must be performed by accredited or unionized individuals of a corresponding generic name. The Specifications do, however, require that certain construction activities shall be performed by specialists who are recognized experts in the operations to be performed. Specialists shall be used for said activities, however the final responsibility for fulfilling the requirements of the Contract remains the Contractor's.

1.05 QUALITY ASSURANCE

A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard of date of issue specified in this section, except where a specific date is established by applicable code.

C. Obtain copies of standards when required by the Contract Documents.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from the Architect/Engineer before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect/Engineer shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

1.06 APPLICABILITY OF INDUSTRY STANDARDS

A. Construction industry standards shall have the same force and effect as if bound or copied directly in the Contract Documents, except where more stringent requirements are specified. All such applicable standards are made a part of the Contract Documents by reference.
   1. Where compliance with two or more standards are referenced and conflicting requirements for quality or quantities occur, comply with the more stringent requirements. Refer questions regarding apparently conflicting standards to the Architect for a decision before proceeding.
   2. The standard of quality or quantity levels specified, shown, or referenced shall be the minimum to be provided or performed. Refer questions regarding standards of minimum quality or quantity to the Architect before proceeding.

1.07 CONSTRUCTION INDUSTRY ORGANIZATIONS AND DOCUMENTS

A. ANSI -- AMERICAN NATIONAL STANDARDS INSTITUTE

B. ASHRAE -- AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.

C. CPSC -- CONSUMER PRODUCTS SAFETY COMMISSION

D. ETL -- ETL TESTING LABORATORY

E. FM -- FACTORY MUTUAL RESEARCH CORPORATION

F. ICC -- INTERNATIONAL CODE COUNCIL, INC.

G. ICEA -- INSULATED CABLE ENGINEERS ASSOCIATION

H. IEEE -- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

I. ISO -- INTERNATIONAL STANDARDS ORGANIZATION

J. MICA -- MIDWEST INSULATION CONTRACTORS ASSOCIATION

K. MSS -- MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY, INC.

L. NECA -- NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION

M. NEMA -- NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

N. NFPA -- NATIONAL FIRE PROTECTION ASSOCIATION

O. UL -- UNDERWRITERS LABORATORIES INC.

1.08 UNITED STATES GOVERNMENT AND RELATED AGENCIES/DOCUMENTS

A. CFR -- CODE OF FEDERAL REGULATIONS

B. CPSC -- CONSUMER PRODUCTS SAFETY COMMISSION

C. EPA -- ENVIRONMENTAL PROTECTION AGENCY

1.09 STATE GOVERNMENT AND RELATED AGENCIES/DOCUMENTS

A. CDB -- ILLINOIS CAPITAL DEVELOPMENT BOARD

B. IDOL -- ILLINOIS DEPARTMENT OF LABOR

C. IDPH -- ILLINOIS DEPARTMENT OF PUBLIC HEALTH

D. IEPA -- ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

E. OSFM -- OFFICE OF THE ILLINOIS STATE FIRE MARSHAL.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary telecommunications services.

B. Temporary sanitary facilities.

C. Temporary controls: Barriers.

D. Security requirements.

E. Vehicular access and parking.

F. Waste removal facilities and services.

1.02 TELECOMMUNICATIONS SERVICES

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:
   1. One (1) mobile cellular telephone for each of Contractor's and any Subcontractor's field personnel.

1.03 TEMPORARY SANITARY FACILITIES

A. Use of existing facilities is permitted.

B. Maintain daily in clean and sanitary condition.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.06 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.07 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Transportation, handling, storage and protection.

C. Product option requirements.

D. Substitution limitations.

E. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

B. Designed, manufactured, and tested in accordance with industry standards.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.03 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site and place in location directed by Owner's representative; obtain Owner's signature on receipt for delivery prior to final payment. Submit signed receipts with Closeout Submittals.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. Substitutions Prior To Bid Opening: Architect/Engineer will consider a written request for substitution provided that such request is received at least seven (7) days prior to the Bid opening date. Requests received after that time will not be considered.
   1. If a request is approved, the Architect/Engineer will issue and appropriate addendum not less than three (3) days prior to the Bid opening date.

B. Substitutions After Notice of Award: Architect/Engineer will consider a request for substitution only under one or more of the following conditions:
   1. Substitution is required for compliance with final interpretation of code requirements or insurance regulations.
   2. Specified product is not available through no fault of the Contractor.
   3. Specified product is not compatible with other specified materials/equipment.
   4. Manufacturer will not certify or warranty specified product as required.

C. Document each request utilizing Substitution Request Form following this section with complete data substantiating compliance of proposed substitution with Contract Documents. Incomplete requests will not be considered. Submit a separate Substitution Request Form and accompanying documentation for each proposed substitution.

D. Provide the following minimum documentation with each Substitution Request Form:
   1. Product identification, manufacturer, product data including dimensions and weight, performance and installation instructions.
   2. Side-by-side itemized comparison of proposed substitution with specified product.
   3. Coordination information including other modifications required as a result of proposed substitution.
   4. Cost information including the effect of the proposed substitution on the Contract Sum.

E. Sign and date the Substitution Request Form.

F. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Agrees to reimburse Owner and Architect/Engineer for review or redesign services associated with re-approval by authorities having jurisdiction over the Project.

G. Architect/Engineer will notify submitter in writing of decision to accept or reject request.

H. Substitutions of products or product characteristics/components/options/accessories will not be considered when they are indicated or implied on Contractor's submittals, without separate written request, or when acceptance will require revision to the Contract Documents, whether rejection of said substitutions is expressly identified by Architect/Engineer on Contractor's submittals or not.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

G. Comply with manufacturer's warranty conditions, if any.

H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

I. Prevent contact with material that may cause corrosion, discoloration, or staining.

J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

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Architects + Engineers

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SUBSTITUTION REQUEST FORM

PROJECT: RAY HARTSTEIN CAMPUS DOMESTIC WATER PRESSURE BOOSTER SYSTEM

SPECIFIED ITEM: _____

Specification Section	Page	Paragraph	Description
_____	_____	_____	_____

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

_____

Attached data includes project description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents which the proposed substitution will require for its proper installation.

The undersigned certifies that the following paragraphs, unless modified by attachments, are correct:

1. The proposed substitution does not affect dimensions shown on drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.

_____
Printed Name

_____
Signature Date

_____
Firm

_____
Telephone

_____
Email

For Use By The Architect/Engineer:

☐ Accepted ☐ Accepted As Noted

☐ Not Accepted ☐ Received Too Late

By: _____

Date: _____

Remarks:

Bloomington Office
2401 East Washington Street
Bloomington, Illinois 61704
309.430.6460

Chicago Office
222 South Riverside Street Plaza
Chicago, Illinois 60606
312.667.5670

Aurora Office
41 W. Benton Street
Aurora, IL 60506
630.406.1213

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition.

C. Cleaning and protection.

D. Starting of systems and equipment.

E. Demonstration and instruction of Owner personnel.

F. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

A. Section 01 30 00 - Administrative Requirements: Submittals procedures.

B. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.

C. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

D. Section 01 79 00 - Demonstration and Training: Demonstration of products and systems to be commissioned and where indicated in specific specification sections

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 PROJECT CONDITIONS

A. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

B. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.05 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. Coordinate completion and clean-up of work of separate sections.

F. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

3.04 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.

2. Report discrepancies to Architect/Engineer before disturbing existing installation.
3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on Drawings.
   2. Relocate items indicated on Drawings.

C. Services (Including but not limited to Plumbing and Electrical): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment ; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

D. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

E. Clean existing systems and equipment.

F. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

G. Do not begin new construction in alterations areas before demolition is complete.

H. Comply with all other applicable requirements of this section.

3.05 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.06 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.07 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architect/Engineer and owner seven days prior to start-up of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.08 DEMONSTRATION AND INSTRUCTION

A. See Section 01 79 00 - Demonstration and Training.

3.09 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.10 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
   1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Use cleaning materials that are nonhazardous.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean site; sweep paved areas, rake clean landscaped surfaces.

E. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect/Engineer and Owner.

B. Notify Architect/Engineer when work is considered ready for Architect/Engineer's Substantial Completion inspection.

C. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect/Engineer's Substantial Completion inspection.

D. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect/Engineer's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect/Engineer.

E. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

F. Notify Architect/Engineer when work is considered finally complete and ready for Architect/Engineer's Substantial Completion final inspection.

G. Complete items of work determined by Architect/Engineer listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Substantial Completion Procedures.

B. Final Completion Procedures.

1.02 RELATED REQUIREMENTS:

A. Section 01 10 00 - Summary.

B. Section 01 78 00 - Closeout Submittals.

1.03 SUBSTANTIAL COMPLETION PROCEDURES

A. Pre-Substantial Completion Conference:
   1. General Contractor to schedule a Pre-substantial Completion Conference 15 days prior to the date of Substantial Completion, prepare an agenda with copies for the participants and preside over the meeting.
   2. Attendance Required: Contractor, Architect/Engineer and Owner.
   3. Minimum Agenda:
      a. Schedule dates of Substantial Completion and Owner occupancy.
      b. Schedule dates for Initial Punch Lists of respective Subcontractors to be produced.
      c. Schedule date for written request for Substantial Completion.
      d. Schedule target date for completion of Initial Punch List items.
      e. Schedule delivery times for Owner-furnished items to be installed by Contractor, Owner's own forces or others under separate Contracts.
      f. Schedule dates for Demonstration and Training of equipment and systems specified.
      g. Schedule completion dates of testing and balancing reports for engineered Systems.
      h. Scheduling and Sequencing of Construction operations around areas partially occupied.
      i. Review job site security during transition of Owner occupancy.
      j. Schedule dates for final inspections from authorities having jurisdiction for Occupancy Permits.
      k. Review protocol for claims from potential move-in damage.
      l. Review procedures for final cleaning.
      m. Review potential concerns regarding environmental conditions.
   4. Record minutes and distribute copies within three days after meeting to participants and those affected by decisions made.

B. Substantial Completion Procedures will be in accordance with the General Conditions of the Contract for Construction, Article 9.8 and include the following:
   1. When the Work or a portion of the Work is considered to be substantially complete, the Contractor inspects the project and prepares a comprehensive list of outstanding items to be completed or corrected, Initial Punch List.
   2. Contractor submits notice of Substantial Completion.
   3. Contractor completes items on the Initial Punch List.
   4. Architect/Engineer inspects the project to verify substantial completion and prepares a Final Punch List.

5. Architect/Engineer prepares Certificate of Substantial Completion, acceptance is required by Owner and Contractor.

1.04 FINAL COMPLETION PROCEDURES

A. Final Completion Procedures will be in accordance with the General Conditions of the Contract for Construction, Article 9.10, and include the following:
   1. When items on Initial and Final Punch Lists are complete, the Contractor submits notice of final completion and final application for payment.
   2. Contractor submits Final Closeout Submittals as specified in Section 01 78 00.
   3. Architect inspects project and verifies the Work is acceptable and conforms with the Contract Documents.
   4. Architect processes final application for payment and closeout submittals.

1.05 CORRECTION PERIOD

A. Correction Period commences on the date of Substantial Completion and expires one year from that date.

B. Owner: document non-conforming or defective work over course of Correction Period. Notify Contractor in writing of nonconforming or defective work. Copy Architect/Engineer.
   1. Life safety issues requiring immediate corrective work: Contact Contractor for action.

C. Post Construction Walk Through:
   1. Time: eleven months after the date of Substantial Completion convene a meeting on site.
   2. Attendees: Architect/Engineer, Owner's Representative, End User and Maintenance Staff.
   3. Minimum Agenda:
      a. Review Owner's list of non-conforming or defective work.
      b. Conduct a walk through of the building and grounds
      c. Prepare a list of additional non-conforming or defective work items.
   4. Architect/Engineer:
      a. Prepare written report of findings within two weeks of meeting.
      b. Notify Contractor of impending corrective work requiring action.
      c. Monitor execution of corrective Work.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTION - NOT USED.

END OF SECTION

SECTION 01 78 00
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.

B. Operation and Maintenance Data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.

B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

C. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.

D. Individual Product Sections: Specific requirements for operation and maintenance data.

E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect/Engineer with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. Submit preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. Submit completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content as required prior to final submission.
   4. Submit revised final documents in final in PDF file format on USB flash drive form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:

1. Description of unit or system, and component parts.
2. Identify function, normal operating characteristics, and limiting conditions.
3. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

D. Include color coded wiring diagrams as installed.

E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Include manufacturer's printed operation and maintenance instructions.

H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

I. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

J. Additional Requirements: As specified in individual product specification sections.

3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into PDF file "manual" for Owner's personnel use, with data arranged in the same sequence as, and bookmarked by, the specification sections.
1. Media: USB flash drive of capacity sufficient to store entire PDF file, fragmented.
2. Attach a tag or label flash drive with Project name, date, and the title "O&M Manual".

B. Where systems involve more than one specification section, provide separate bookmark for each system.

C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

D. Prepare data in the form of an instructional manual.

E. Cover Page: Populate the first page of the PDF file with: printed title "OPERATION AND MAINTENANCE MANUAL; identify title of Project; identify subject matter of contents.

F. Project Directory: Beginning on the second page of the PDF file; provide Title and address of Project; names, addresses, and telephone numbers of Architect/Engineer, Consultants, Contractor and subcontractors, with names of responsible parties.

G. Table of Contents: List every item identified by a bookmark, using the same identification as in the title of the bookmark.

H. Bookmarks: Bookmark each separate product and system; identify the contents in the title of the bookmark; on the bookmarked page provide a description of product and major component parts of equipment.

I. Content: Manufacturer's printed data, legibly scanned, in color where applicable, at 300 dpi resolution.

J. Drawings: Legibly scanned, in color where applicable, at 300 dpi resolution; PDF file page size to match native sheet size of original drawing.

K. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Product data, shop drawings, and other submittals.
      c. Operation and maintenance data.
      d. Field quality control data.
      e. Warranties and bonds.

3.05 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include color, 300 dpi resolution scans of each in Operation and Maintenance Manual PDF file, bookmarked indexed separately in Table of Contents.

F. Manual: Bind original copies of warranties and bonds in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.

G. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

SECTION 01 79 00
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
   1. Plumbing equipment.

1.02 RELATED REQUIREMENTS

A. Section 01 78 00 - Closeout Submittals: Operation and maintenance manuals.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Training Plan: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit to Architect/Engineer for transmittal to Owner.
   2. Submit not less than two weeks prior to start of training.
   3. Revise and resubmit until acceptable.
   4. Provide an overall schedule showing all training sessions.
   5. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such a slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Reports:
   1. Identification of each training session, date, time, and duration.
   2. Sign-in sheet showing names and job titles of attendees.
   3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.

1.04 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
   1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
   2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstration may be combined with Owner personnel training if applicable.

C. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

D. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Conduct training on-site unless otherwise indicated.

B. Owner will provide classroom and seating at no cost to Contractor.

C. Provide training in minimum two hour segments.

D. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

E. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
   6. Discuss common troubleshooting problems and solutions.
   7. Discuss any peculiarities of equipment installation or operation.
   8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
   9. Review recommended tools and spare parts inventory suggestions of manufacturers.
   10. Review spare parts and tools required to be furnished by Contractor.
   11. Review spare parts suppliers and sources and procurement procedures.

F. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION

SECTION 22 07 19
PLUMBING PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Piping insulation.

B. Jackets and accessories.

1.02 REFERENCE STANDARDS

A. ASTM C195 - Standard Specification for Mineral Fiber Thermal Insulating Cement 2007 (Reapproved 2019).

B. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation 2022a.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.

D. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

B. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum three years of experience.

B. Comply with the Midwest Insulation Contractors Association "National Commercial and Industrial Insulation Standards".

1.05 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.06 FIELD CONDITIONS

A. Maintain ambient conditions required by manufacturers of each product.

B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, UL 723, ASTM E84, or UL 723.

2.02 GLASS FIBER

A. Manufacturers:

1. CertainTeed Corporation.
2. Johns Manville Corporation.
3. Knauf Insulation.
4. Owens Corning Corporation.

B. Insulation: ASTM C547and ASTM C795; semi-rigid, noncombustible, end grain adhered to jacket.
   1. Maximum Service Temperature: 650 degrees F.
   2. Maximum Moisture Absorption: 0.2 percent by volume.

C. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.

D. Vapor Barrier Lap Adhesive: Compatible with insulation.

E. Insulating Cement/Mastic: ASTM C195; hydraulic setting on mineral wool.

2.03 JACKETS

A. PVC Plastic.
   1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
      a. Minimum Service Temperature: 0 degrees F.
      b. Maximum Service Temperature: 150 degrees F.
      c. Connections: Brush on welding adhesive.
   2. Covering Adhesive Mastic: Compatible with insulation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that piping has been tested before applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.

C. Exposed Piping: Locate insulation and cover seams in least visible locations.

D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints. All hangers, supports, anchors and other projections that are in contact to cold surfaces shall be insulated and vapor sealed to prevent condensation.

E. Glass fiber insulated pipes conveying fluids below ambient temperature:
   1. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.

F. Inserts and Shields:
   1. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
   2. Insert Location: Between support shield and piping and under the finish jacket.

3. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
4. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.

G. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions.

H. Apply insulation at pipe hangers and supports according to National Commercial and Industrial Standards Plate Numbers 5, 6 and 7.

3.03 SCHEDULES

A. Plumbing Systems:
   1. Domestic Cold Water:
      a. Glass Fiber Insulation:
         1) Pipe Size Range: All sizes.
            a) Thickness: 1 inch.

END OF SECTION

SECTION 22 10 05
PLUMBING PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe, pipe fittings, specialties, and connections for piping systems.
   1. Domestic water.

1.02 RELATED REQUIREMENTS

A. Section 22 07 19 - Plumbing Piping Insulation.

1.03 REFERENCE STANDARDS

A. ASME B16.4 - Gray Iron Threaded Fittings: Classes 125 and 250 2021.

B. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings 1999, with Editorial Revision (2022).

C. ASTM B32 - Standard Specification for Solder Metal 2020.

D. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2022.

E. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube 2016.

F. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings 2016.

G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.

H. AWWA C606 - Grooved and Shouldered Joints 2015.

I. AWWA C651 - Disinfecting Water Mains 2014, with Addendum (2020).

J. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018, with Amendment (2019).

K. MSS SP-67 - Butterfly Valves 2022.

L. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends 2010, with Errata .

M. NSF 61 - Drinking Water System Components - Health Effects 2022, with Errata.

N. NSF 372 - Drinking Water System Components - Lead Content 2022.

O. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

P. Safe Drinking Water Act, Section 1417 - Lead Free: Refers to the wetted surface of pipe, fittings and fixtures in potable water systems that have a weighted average lead content <= 0.25%, Amended January 4, 2011.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with applicable codes.

B. Valves: Manufacturer's name and pressure rating marked on valve body. Manufacturers lead free marking on valve body.

C. Perform Work in accordance with City plumbing ordinances.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

B. Provide temporary protective coating on cast iron and steel valves.

C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

B. Plenum-Installed Acid Waste Piping: Flame-spread index equal or below 25 and smoke-spread index equal or below 50 according to ASTM E84 or UL 723 tests.

2.02 DOMESTIC WATER PIPING, ABOVE GRADE

A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
   1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
   2. Joints: ASTM B32, alloy Sn95 solder.
   3. Mechanical Press Sealed Fittings: Double pressed type, NSF 61 approved or certified, utilizing EPDM, non toxic synthetic rubber sealing elements. Sealing elements shall be factory installed by fitting manufacturer. Press ends shall have means to indicate non-pressed fitting during pressure testing.
      a. Manufacturers:
         1) Viega LLC.
         2) Nibco.

B. Steel Pipe: ASTM A53/A53M Schedule 40, galvanized, using one of the following joint types:
   1. Threaded Joints: ASME B16.4 cast iron fittings.
   2. Grooved Joints: AWWA C606 grooved pipe, cast iron fittings, and mechanical couplings.

2.03 FLANGES, UNIONS, AND COUPLINGS

A. Unions for Pipe Sizes 3 Inches and Under:
   1. Ferrous pipe: Class 150 malleable iron threaded unions.
   2. Copper tube and pipe: Class 150 bronze unions with soldered joints.

B. Flanges for Pipe Size Over 1 Inch:

1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.

C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
1. Dimensions and Testing: In accordance with AWWA C606.
2. Housing Material: Provide ASTM A47/A47M malleable iron or ductile iron, galvanized.
3. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
4. When pipe is field grooved, provide coupling manufacturer's grooving tools.

D. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.04 PIPE HANGERS AND SUPPORTS

A. Provide hangers and supports that comply with MSS SP-58.
1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
2. Vertical Pipe Support: Steel riser clamp.
3. Floor Supports: Concrete pier or steel pedestal with floor flange; fixture attachment.

B. Plumbing Piping - Water:
1. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.
2. Hangers for Cold Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
3. Hangers for Hot Pipe Sizes 2 Inches to 4 Inches: Carbon steel, adjustable, clevis.
4. Hangers for Hot Pipe Sizes 6 Inches and Over: Adjustable steel yoke, cast iron pipe roll, double hanger.
5. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
6. Wall Support for Pipe Sizes 4 Inches and Over: Welded steel bracket and wrought steel clamp.
7. Wall Support for Hot Pipe Sizes 6 Inches and Over: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron pipe roll.
8. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

2.05 BALL VALVES

A. Manufacturers:
1. Nibco, Inc; T/S-585-66-LF.
2. Watts.
3. Milwaukee Valve Company.

B. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze body, 304 stainless steel ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, solder, threaded, or grooved ends.

2.06 BUTTERFLY VALVES

A. Manufacturers:
1. Crane Co..
2. Nibco; Model LD 2000N-3/5.

3. Watts.

B. Construction 1-1/2 Inches and Larger: MSS SP-67, 200 psi CWP, NSF61G, ductile iron body (ASTM A536, lead free aluminum bronze disc, geometric drive (one piece stainless steel stem, no pin through disc), resilient molded-in EPDM seat, lug ends suitable for bidirectional dead-end service rated pressure without use of downstream flange, extended neck, 10 position lever handle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.

C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

D. Install piping to maintain headroom, conserve space, and not interfere with use of space.

E. Group piping whenever practical at common elevations.

F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

G. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.

H. Pipe Hangers and Supports:
   1. Support horizontal piping as indicated.
   2. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
   3. Place hangers within 12 inches of each horizontal elbow.
   4. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   5. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.04 APPLICATION

A. Use grooved mechanical couplings and fasteners only in accessible locations.

B. Install unions downstream of valves and at equipment or apparatus connections.

C. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.

D. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.

E. Provide lug end butterfly valves adjacent to equipment when provided to isolate equipment.

3.05 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Prior to starting work, verify system is complete, flushed and clean.

B. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).

C. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.

D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.

E. Maintain disinfectant in system for 24 hours.

F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.

G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

3.06 SCHEDULES

A. Pipe Hanger Spacing:
   1. Metal Piping:
      a. Pipe Size: 1/2 inches to 1-1/4 inches:
         1) Maximum Hanger Spacing: 6.5 ft.
         2) Hanger Rod Diameter: 3/8 inches.
      b. Pipe Size: 1-1/2 inches to 2 inches:
         1) Maximum Hanger Spacing: 10 ft.
         2) Hanger Rod Diameter: 3/8 inch.
      c. Pipe Size: 2-1/2 inches to 3 inches:
         1) Maximum Hanger Spacing: 10 ft.
         2) Hanger Rod Diameter: 1/2 inch.
      d. Pipe Size: 4 inches to 6 inches:
         1) Maximum Hanger Spacing: 10 ft.
         2) Hanger Rod Diameter: 5/8 inch.

END OF SECTION

SECTION 22 30 00
PLUMBING EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pressure booster systems.

1.02 RELATED REQUIREMENTS

A. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

A. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

B. NEMA MG 1 - Motors and Generators 2021.

C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

D. UL 778 - Standard for Motor-Operated Water Pumps Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittals procedures.

B. Product Data:
   1. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
   2. Indicate pump type, capacity, power requirements.
   3. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
   4. Provide electrical characteristics and connection requirements.

C. Operation and Maintenance Data: Include operation, maintenance, and inspection data, replacement part numbers and availability, and service depot location and telephone number.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Certifications:
   1. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

C. Performance: Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, operate within 25 percent of midpoint of published maximum efficiency curve.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

PART 2 PRODUCTS

2.01 PRESSURE BOOSTER SYSTEM

A. Manufacturers;
   1. Metropolitan Industries: Model HES-MTIII-10D-PHI-70.
   2. Bell & Gossett.
   3. Peerless.

B. System: Duplex variable speed pump system, factory assembled, wired, tested and adjusted; consisting of pumps, valves, piping, with control panel assembled on fabricated steel base with structural steel base and structural steel framework, all epoxy coated after welding is completed to ensure corrosion resistance..

C. All wetted components of the system shall be ANSI/NSF-372 compliant. Package shall be able to be split as required to fit through standard doorway. System designed to provide scheduled flow-rate of 250 gpm at a constant discharge pressure of 70 psig based on a net suction pressure of 30 psig.

D. Controls: The system shall include a Metrotech-III logic panel with a programmable controller, with a 7" diagonal 65,500-color touch-screen operator interface panel. The screen shall show system status and provide for the entry of set points and commands. The programmable controller shall be of the field programmable design. The 320 x 234 pixel color touch-screen shall indicate audible and visual alarms with remote alarm contact terminals for the following conditions;
   1. High system pressure.
   2. Low system pressure.
   3. Low suction pressure.
   4. Common alarm.

   BACnet card for connection to the building automation system for read only points of;
   5. System inlet pressure.
   6. System outlet pressure.
   7. System alarm conditions.
   8. VFD speed/pump operation.
   9. Identified points shall be connected, including graphics, into campus control system by campus controls contractor; Automated Logic.

   Package shall include two pressure transducers and two dedicated variable frequency drives. Variable frequency drives shall be ABB, no substitutions. The controller shall raise the set point pressure as low flow periods, charge the existing hydro-pneumatic tank and shut down the pumps until flow resumes.

E. Pumps: The two pumps shall be closed-coupled stainless steel-fitted, end-suction centrifugal type with stainless steel casings, stainless steel impellers and stainless steel shafts. Each pump shall be coupled to a 10 Hp, variable speed motor with 1.15 service factor and ODP enclosure of the high-efficiency type. The pump performance curves shall not exceed the published motor nameplate horsepower at any point along the entire curve. Performance shall be;
   1. Pump-1: 250 gpm @ 93 ft TDH, 120 ft maximum shut off head @ zero gpm.
   2. Pump-2: 250 gpm @ 93 ft TDH, 120 ft maximum shut off head @ zero gpm.
   3. Electrical: 480/3/60.

F. Expansion Tanks: NSF/ANSI 61; Two (2) 120-gallon ASME-Rated hydro-pneumatic tanks, 90% acceptance volume, 150 psi maximum working pressure, 240 degrees F maximum operating temperature, seamless completely replaceable FDA approved compound bladder, pressure gauge, epoxy gray exterior finish and epoxy coated system connection. Elbi Model WTL-450.

G. Piping/valving: The individual pump branch piping shall be 3-inch with lug-style butterfly valves on the inlet and 3-inch size with lug-style butterfly valves on the outlet of each pump, as well as silent check valves on the outlet of each pump. The booster package shall include 6-inch suction and 6-inch discharge headers.

H. The system shall be factory flow-tested in the manufacturer's test-lab before shipment to ensure correct operation.

I. System manufacturer shall provide start-up services.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.

B. Coordinate with plumbing piping and related electrical work to achieve operating system.

C. Pumps:
   1. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

D. Coordinate BAS, BMS, or Integrated Automation linking between unit controller(s) and remote front-end interface.

END OF SECTION

SECTION 26 05 00
BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Basic Electrical Requirements and materials specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements. Section includes:
   1. Electrical Identification.
   2. Minor Demolition.
   3. Conductors and Devices.
   4. Raceways and Boxes.
   5. Supporting Devices.

1.03 REGULATORY REQUIREMENTS

A. Conform to building codes as adopted by the Illinois Community College Board..

B. Install electrical Work in accordance with the NECA Standard of Installation.

1.04 DELIVERY, STORAGE AND HANDLING

A. Store and protect all materials as specified under the provisions of Section 01 60 00 and as specified herein.

B. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

C. Ship products to the job site in their original packaging. Receive and store products in a suitable manner to prevent damage or deterioration. Keep equipment upright at all times.

D. Investigate the spaces through which equipment must pass to reach its final destination. Coordinate with the manufacturer to arrange delivery at the proper stage of construction and to provide shipping splits where necessary.

1.05 PROJECT/SITE CONDITIONS

A. Install work in locations shown on Drawings, unless prevented by Project conditions. Drawings have omitted certain branch circuitry in areas for ease of reading. All branch circuitry is to be provided by Contractor.

B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission from Architect/Engineer before proceeding as specified under modification procedures.

1.06 QUALITY ASSURANCE

A. Provide Work as required for a complete and operational electrical installation.

B. All products shall be designed, manufactured, and tested in accordance with industry standards. Standards, organizations, and their abbreviations as used hereafter, include the following:
   1. American National Standards Institute, Inc (ANSI).
   2. American Society for Testing and Materials (ASTM).
   3. National Electrical Manufacturers Association (NEMA).
   4. Underwriters Laboratories, Inc. (UL).

C. Install all Work in accordance with the NECA Standard of Installation.

1.07 SUBMITTALS

A. Submit all requested items in Division 26 Sections under provisions of Section 01 30 00.

1.08 SUBSTITUTIONS

A. Substitutions will be considered only as allowed within the provisions of Section 01 60 00.

1.09 PROJECT RECORD DOCUMENTS

A. Cooperate and assist in the preparation of project record documents under the provisions of Section 01 78 00.

1.10 PROJECT MANAGEMENT AND COORDINATION

A. Proper project management and coordination is critical for a successful project. Manage and coordinate the Work with all other trades in accordance with Section 01 30 00 requirements. Reliance on the Drawings and Specifications only for exact project requirements is insufficient for proper coordination.

PART 2 PRODUCTS

2.01 WIRING METHODS

A. All exposed locations: Building wire in raceway.

B. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 14 AWG for control wiring.
   1. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 100 feet. Use minimum #10 AWG conductor wire in all the following locations:
      a. All programmable panel branch circuits (larger where indicated).
      b. All emergency lighting and exit branch circuits.

2.02 BUILDING WIRE

A. Manufacturers:
   1. Anixter.
   2. Southwire.
   3. Allied Wire and Cable.

B. Building Wire:
   1. Feeders and Branch Circuits Larger Than 6 AWG: Copper, stranded conductor, 600 volt insulation.
   2. Feeders and Branch Circuits 6 AWG and Smaller: Copper conductor, 600 volt insulation. 6 and 8 AWG, stranded conductor; smaller than 8 AWG, stranded conductor (solid for device

terminations).
3. Control Circuits: Copper, stranded conductor, 600 volt insulation.
4. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
5. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.
6. Use conductor not smaller than 12 AWG for power and lighting circuits.
7. Use conductor not smaller than 16 AWG for control circuits.

C. Locations:
1. Concealed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.
2. Exposed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.
3. Above Accessible Ceilings: Use only building wire with Type THHN insulation in raceway.
4. Wet or Damp Interior Locations: Use only building wire with Type THWN insulation in raceway.
5. Exterior Locations: Use only building wire with Type XHHW insulation in raceway.
6. Underground Installations: Use only building wire with Type XHHW insulation in raceway.

2.03 RACEWAY REQUIREMENTS

A. Use only specified raceway in the following locations:
1. Branch Circuits and Feeders:
a. Concealed Dry Interior Locations: Electrical metallic tubing.
b. Exposed Dry Interior Finished Locations: Electrical metallic tubing.
c. Exposed Dry Interior Unfinished Locations: Electrical metallic tubing.
d. All other locations: Galvanized Rigid Metallic Conduit.

B. Size raceways for conductor type installed.
1. Minimum Size Conduit Homerun to Panelboard: 3/4-inch.

2.04 METALLIC CONDUIT AND FITTINGS

A. Conduit:
1. Electrical metallic tubing: ANSI C80.3.
2. Flexible Conduit: UL 1, zinc-coated steel.
a. Liquidtight Flexible Conduit: UL360. Fittings shall be specifically approved for use with this raceway.

B. Conduit Fittings:
1. Metal Fittings and Conduit Bodies: NEMA FB 1.
a. EMT fittings: Use set-screw indentor-type fittings.

2.05 FUSE

A. Existing Switchboard Section: Square D QMB Fusible Switch tagged 'HP-1 Feeder No. 2369,

B. Fuse: Compatible with switchboard section fuseholder. Time Delay, Type RK1, 600V, 200,000AIC.
1. Manufacturer: Bussman, Littlefuse

2.06 CONDUIT HANGERS

A. Manufacturers:
1. Minerrallac Electric Company.
2. Substitutions: Or Approved Equal.

B. Description:
   1. Standard conduit hanger, zinc-plated steel with bolts.
   2. Threaded rod and hardware: Plated finish, size and length as required for loading and conditions.

2.07 PENETRATION SEALANTS

A. Fire-rated assemblies: Provide firestopping of all penetrations made by Work under this Contract.

B. Thermal and Moisture Protection: Provide thermal and moisture protection made by Work under this Contract of all exterior wall, floor and roof penetrations.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Demolition Drawings are based on casual field observation and are intended to identify the limits of the construction site. Remove all electrical systems in their entirety in proper sequence with the Work.

B. Beginning of demolition means installer accepts existing conditions.

C. Verify that supporting surfaces are ready to receive work.

D. Electrical boxes are shown on Drawings, in approximate locations, unless dimensioned.

END OF SECTION

SECTION 26 05 83
WIRING CONNECTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical connections to equipment and devices not and integral part of the electrical distribution system.

1.02 RELATED REQUIREMENTS

A. Section 22 30 00 - Plumbing Equipment

1.03 ADMINISTRATIVE REQUIREMENTS

A. Provide conduit rough-in and electrical connection to powered equipment and devices identified in the Project Manual and on the Drawings. Refer specifically, but not limited to, these Specification Sections for further information:
   1. Section 22 30 00 -Plumbing Equipment

B. Coordination: Determine connection locations and requirements for furniture, equipment and devices furnished or provided under other sections.
   1. Do not rely solely on the Drawings and Project Manual for execution of the Work of this Section.
   2. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions.
   3. Include necessary field evaluation time to inspect connection requirements.
   4. Coordinate with other trades to determine exact rough-in requirements.

C. Sequencing:
   1. Install rough-in of electrical connections before installation of furniture and equipment is required.
   2. Make electrical connections before required start-up of equipment.

PART 2 PRODUCTS

2.01 MATERIALS

A. Disconnect Switches: As specified in individual equipment sections. Provide flexible conduit connection.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.02 ELECTRICAL CONNECTIONS

A. Make electrical connections in accordance with equipment manufacturer's instructions.

B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.

D. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.

END OF SECTION

GENERAL NOTES

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH BY IBC 2021 AND SHALL CONFORM TO ALL OTHER APPLICABLE MUNICIPAL, STATE, AND FEDERAL REGULATIONS INCLUDING THE ILLINOIS ACCESSIBILITY CODE (2018) AND THE AMERICANS WITH DISABILITIES ACT.

A. GENERAL NOTES

1. ALL CONTRACTORS ARE REQUIRED TO VISIT THE SITE AND BE KNOWLEDGEABLE REGARDING EXISTING CONDITIONS AND THEIR EFFECT ON THE PROPOSED WORK. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR, ANY CONDITIONS REQUIRING MODIFICATION BEFORE PROCEEDING WITH THE PROJECT.
2. NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO THE INTERRUPTION OF ANY UTILITY.
3. PROTECT AND KEEP IN SERVICE ACTIVE UNDERGROUND UTILITIES, PIPES, OR CONDUITS, WHETHER INDICATED ON THE DRAWINGS OR NOT, UNLESS SPECIFICALLY CALLED FOR TO BE REMOVED, RELOCATED, OR DISCONNECTED AND ABANDONED.
4. CONTRACTORS AND SUBCONTRACTORS SHALL COORDINATE THEIR WORK WITH THAT OF OTHER TRADES.
5. NO WORK WILL BE PERMITTED TO BE INSTALLED WITHOUT RECEIPT AND SUBSEQUENT REVIEW OF FULL AND COMPLETE SUBMITTALS BY THE ARCHITECT/ENGINEER.
6. DO NOT SCALE DRAWINGS, DIMENSIONS INDICATED TAKE PRECEDENCE OVER SCALE.
7. VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD. WHERE DISCREPANCIES ARE FOUND BETWEEN DIMENSIONS OR ELEVATIONS SHOWN AND ACTUAL FIELD CONDITIONS, NOTIFY ARCHITECT/ENGINEER.
8. WHERE CONFLICTS MAY EXIST BETWEEN THE REQUIREMENTS OF PORTIONS OF THE CONTRACT DOCUMENTS, THE GREATER QUANTITY, HIGHER QUALITY OR MORE STRINGENT REQUIREMENT SHALL GOVERN. THEREFORE, BY EXECUTING A CONTRACT FOR CONSTRUCTION, THE CONTRACTOR AGREES THAT, IF IT RAISED NO QUESTIONS REGARDING SUCH CONFLICTS DURING THE BIDDING PROCESS, AND IN THE ABSENCE OF A CLARIFYING ADDENDUM ISSUED DURING THE BIDDING PROCESS, IT HAS VOLUNTEERED TO COMPLY WITH THE MORE EXPENSIVE REQUIREMENT AS PART OF ITS BASE BID AND IS NOT ENTITLED TO ANY ADDITIONAL COMPENSATION TO RESOLVE THE CONFLICT.
9. THE CONTRACT DOCUMENTS REQUIRE THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE PRODUCTS, SYSTEMS AND SERVICES. BY EXECUTING A CONTRACT FOR CONSTRUCTION, THE CONTRACTOR AGREES THAT THE DRAWINGS SET FORTH THE DESIGN INTENT AND, THEREFORE, MAY NOT EXPRESSLY DEPICT EVERY LENGTH, SEGMENT, PIECE, PART, COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE. THE CONTRACTOR FURTHER AGREES THAT, AS PART OF ITS BID, IT MUST FURNISH AND INSTALL EVERY LENGTH, SEGMENT, PIECE, PART, COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE AND, CONSEQUENTLY, THE CONTRACTOR IS NOT ENTITLED TO ANY ADDITIONAL COMPENSATION FOR ANY LENGTH, SEGMENT, PIECE, PART COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE BECAUSE IT IS NOT EXPRESSLY DEPICTED HEREIN.

B: MISCELLANEOUS AND DEMOLITION NOTES

1. COORDINATE PENETRATIONS AND/OR SLEEVES REQUIRED IN WALLS, FLOORS, CEILINGS OR ROOFS FOR MECHANICAL AND ELECTRICAL WORK REQUIRED BY ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.
2. SEAL PENETRATIONS OF DUCTWORK, CONDUIT OR PIPES WITH UL APPROVED MATERIALS TO MAINTAIN THE FIRE RATING OF ASSEMBLIES. PROVIDE FIRE DAMPERS AS INDICATED ON THE DRAWINGS.
3. APPLY APPROPRIATE & COMPATIBLE SEALANT MATERIALS AS REQUIRED TO SEPARATE DISSIMILAR METALS, FILL GAPS IN EXISTING ASSEMBLIES OR WHERE NEW AND EXISTING ASSEMBLIES MEET OR WHERE OTHERWISE REQUIRED BY THE SPECIFICATIONS.
4. BRING ANY UNFORESEEN OR CONFLICTING CONDITIONS TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
5. REPAIR, PATCH, OR REPLACE FINISH MATERIALS OR VISIBLE ASSEMBLIES THAT ARE SOILED, CUT OR DAMAGED IN ANY FASHION DURING THE COURSE OF THE WORK. PERFORM PATCHING SUCH THAT EDGES BLEND INTO CONTIGUOUS SURFACES SMOOTHLY, MATCHING TEXTURE AND COLOR OF ADJACENT SURFACES.

STANDARD ABBREVIATIONS

@	– AT	EXP	– EXPANSION	PL	– PLATE
A B	– ANCHOR BOLT	EXP CONST	– EXPOSED CONSTRUCTION	PL LAM	– PLASTIC LAMINATE
ABR	– ABRASIVE	FD	– FLOOR DRAIN	PL	– PLASTER
AT–(1)	– ACOUSTIC TILE CEILING (TYPE)	FDN	– FOUNDATION	PLB'G	– PLUMBING
AFF	– ABOVE FINISH FLOOR	FE	– FIRE EXTINGUISHER	PLB'G CONTR	– PLUMBING CONTRACTOR
AFG	– ABOVE FINISH GRADE	FEC	– FIRE EXTINGUISHER CABINET	PLYWD	– PLYWOOD
ACOUS	– ACOUSTIC	FHC	– FIRE HOSE CABINET	PNT	– PAINT
ADD'N	– ADDITION	FIN	– FINISH	PVC	– POLYVINYL CHLORIDE
ADD'L	– ADDITIONAL	FLR	– FLOOR	PL–(1)	– GYPSUM PLASTER (TYPE)
ADJ	– ADJACENT	FRT	– FIRE RETARDANT TREATED (RATED)	R OR RAD	– RADIUS
ADJT	– ADJUSTABLE	FUR CHN'L	– FURRING CHANNEL	R	– RISER
AL	– ALUMINUM	FTG	– FOOTING	RD	– ROOF DRAIN
ALT	– ALTERNATE	GA	– GAUGE	RO	– ROUGH OPENING
ANCH	– ANCHOR	GALV	– GALVANIZED	RF (1)	– RUBBER FLOORING (TYPE)
AP	– ACCESS PANEL	GEN CONTR	– GENERAL CONTRACTOR	RH	– RIGHT HAND
APPROX	– APPROXIMATE	GC	– GENERAL CONTRACTOR	REF	– REFERANCE
ASPH	– ASPHALT	GL	– GLASS	REINF	– REINFORCING
AUTO	– AUTOMATIC	GYP DB–(1)	– GYPSUM WALL BOARD (DRYWALL)(TYPE)	REQ'D	– REQUIRED
AVG	– AVERAGE	GYP PL–(1)	– GYPSUM PLASTER (TYPE)	RM	– ROOM
BSMT	– BASEMENT	H	– HIGH	SF	– SQUARE FOOT
BD	– BOARD	HD	– HEAVY DUTY	SI	– SQUARE INCH
BITUM	– BITUMINOUS/BITUMASTIC	HD	– HARD	SK	– SINK
BLDG	– BUILDING	HDNR	– HARDENER	SS	– STAINLESS STEEL
BLK'G	– BLOCKING (WOOD)	HD WD–(1)	– HARD WOOD (TYPE)	SSK	– SERVICE SINK
BM	– BEAM	HDWRE	– HARDWARE	SQ	– SQUARE
B.M.	– BENCH MARK	HGT	– HEIGHT	SCHED	– SCHEDULE
BT STL PL	– BENT STEEL PLATE	HM	– HOLLOW METAL	SEAL/HDNR	– SEALER/HARDENER
BRG	– BEARING	HP	– HIGH POINT	SEC	– SECTION
BRKT	– BRACKET	HORIZ	– HORIZONTAL	SHT	– SHEET
BRK	– BRICK	HTG	– HEATING	SIM	– SIMILAR
BTM	– BOTTOM	HVAC	– HEATING/VENTILATING/AIR CONDITIONING	SOG	– SLAB ON GRADE
BTWN	– BETWEEN	IN	– INCH	SPEC	– SPECIFICATION(S)
CJ	– CONSTRUCTION/CONTRACTION JOINT	ID	– INSIDE DIAMETER	SPC'G	– SPACING
CAB	– CABINET	INCL	– INCLUDE (D)	SPK'R	– SPEAKER
CEM PL–(1)	– CEMENT PLASTER (TYPE)	INSUL	– INSULATION OR INSULATING	STN	– STN
CT PAV–(1)	– CERAMIC PAVER TILE (TYPE)	JT	– JOINT	STD	– STANDARD
CIPC	– CAST– IN– PLACE CONCRETE	KD	– KNOCK DOWN	STD WGT	– STANDARD WEIGHT
CLG	– CEILING	L	– LONG	STL	– STEEL
CLR	– CLEAR	LAM	– LAMINATED	STRUCT	– STRUCTURAL OR STRUCTURE
CO	– CLEAN OUT	LAV	– LAVATORY	SUSP	– SUSPEND(ED)
CMU	– CONCRETE MASONRY UNIT	LH	– LEFT HAND	SYM	– SYMMETRICAL
COL	– COLUMN	LP	– LOW POINT	T	– TREAD
COMB	– COMBINATION	LGT WGT	– LIGHTWEIGHT	T&G	– TONGUE AND GROOVE
COMP	– COMPRESSIBLE	LL	– LIVE LOAD	T/B	– TOP OF BEAM
COMPT'D	– COMPACTED	LLH	– LONG LEG HORIZONTAL	T/C	– TOP OF CURB
CONC	– CONCRETE	LLV	– LONG LEG VERTICAL	T/F	– TOP OF FOUNDATION
CONC OPNG	– CONCRETE OPENING	LVR	– LOUVER	T/S	– TOP OF SLAB
COND	– CONDITION	MO	– MASONRY OPENING	T/STL	– TOP OF STEEL
CONT	– CONTINUOUS	MT	– METAL THRESHOLD	T/W	– TOP OF WALL
CONTR	– CONTRACT (OR)	MAS'Y	– MASONRY	TB (4)	– TACKBOARD (LENGTH)
CPT–(1)	– CARPET (TYPE)	MAT'L	– MATERIAL	TOM	– TOP OF MASONRY
CT–(1)	– CERAMIC TILE (TYPE)	MAX	– MAXIMUM	TYP	– TYPICAL
CTR	– COUNTER	MB–(16)	– MARKERBOARD– (LENGTH)	UNO	– UNLESS NOTED OTHERWISE
CTR SK	– COUNTER SINK	MECH	– MECHANICAL	VBC	– VINYL BASE COVED
CTS	– CENTER(S)	MECH CONTR	– MECHANICAL CONTRACTOR	VBS	– VINYL BASE STRAIGHT
CUH	– CABINET UNIT HEATER	MFR	– MANUFACTURER	VCT	– VINYL COMPOSITION TILE
CUV	– CABINET UNIT VENTILATOR	MIN	– MINIMUM	VEN PL (1)	– VENEER PLASTER (TYPE)
DIA	– DIAMETER	MISC	– MISCELLANEOUS	VERT	– VERTICAL
DIM	– DIMENSION	MSB	– MOP SERVICE BASIN (SINK)	W	– WIDE OR WIDTH
DN	– DOWN	MT(D)	– MOUNT(ED)	W/	– WITH
DR	– DOOR	MTL	– METAL	W/O	– WITHOUT
DWG'S	– DRAWINGS	NIC	– NOT IN CONTRACT	WCG	– WALL CORNER GUARD
DTL	– DETAIL	NOM	– NOMINAL	WD	– WOOD
DWL'S	– DOWELS	NTS	– NOT TO SCALE	WDN	– WINDOW
EA	– EACH	NO	– NUMBER	WGT	– WEIGHT
EJ	– EXPANSION JOINT	OA	– OVERALL	WP	– WATER PROOF
EL	– ELEVATION	OC	– ON CENTER	WWF	– WELDED WIRE FABRIC
ELEC	– ELECTRIC/ELECTRICAL	OD	– OUTSIDE DIAMETER	WSB	– WALL SERVICE BASIN
ELEC CONTR	– ELECTRICAL CONTRACTOR	OF	– OUTSIDE FACE		
ELEV	– ELEVATOR	OPN'G	– OPENING		
EMBED	– EMBEDMENT	OPP	– OPPOSITE		
EMER	– EMERGENCY	OPP HD	– OPPOSITE HAND		
EP PNT	– EPOXY PAINT	PSF	– POUNDS PER SQUARE FOOT		
EQ	– EQUAL	PSI	– POUNDS PER SQUARE INCH		
EW	– EACH WAY	PT	– PRESSURE TREATED		
EWC	– ELECTRIC WATER COOLER	PTN	– PARTITION		
EWH	– ELECTRIC WATER HEATER	PAV'T	– PAVEMENT		
ER–(26)	– EXHIBIT RAIL (LENGTH)	PC	– PIECE		
EXIST	– EXISTING	PFM	– PERMANENT FLOOR MAT		

THE MATERIALS, ABBREVIATIONS, AND DRAFTING SYMBOLS LEGEND ARE EACH AN ALL INCLUSIVE MASTER LIST USED BY THIS FIRM. THE INCLUSION OF THESE LEGENDS INTO THESE DOCUMENTS DOES NOT IMPLY THAT ALL THE SYMBOLS OR MATERIALS INCLUDED IN THESE LEGENDS ARE INCORPORATED INTO THIS PROJECT.

DRAFTING MATERIALS LEGEND

DETAIL NUMBER / DRAWING NUMBER	8 / A12.24
DETAIL NUMBER / DRAWING NUMBER	23 / A7.19
DETAIL NUMBER / DRAWING NUMBER	2 / 6 A9.10 5 / 3
DETAIL NUMBER / DRAWING NUMBER	1 / A6.05
COLUMN NUMBER	26
LOCATION ELEVATION	1ST FLR. 100'–0"
ROOM NUMBER	204
DOOR NO. NEW / DOOR NO. EXISTING	203.2 / 203.1X
NOMINAL THICKNESS / CONSTRUCTION TYPE / SPECIAL CONDITION	4 / A / 0
KEYNOTE IDENTIFICATION	23.211
WINDOW TYPE IDENTIFICATION	X
TOILET ACCESSORY IDENTIFICATION	X
SPOT ELEVATION	1ST FLR. 100'–0"
	STEEL
	EARTH
	CONCRETE
	INSULATION RIGID
	INSULATION BATT
	BRICK
	WOOD FINISHED
	BLOCKING DISCONTINUOUS
	BLOCKING CONTINUOUS
	CONCRETE MASONRY UNIT (RUNNING BOND)
	CONCRETE MASONRY UNIT (STACK BOND)
	BITUMINOUS CONCRETE
	ACOUSTIC CEILING PANEL
	GYPSUM WALL BOARD
	GRAVEL
	RAKED JOINT CJ / EJ

Oakton Community College

PROJECT DOMESTIC WATER PRESSURE BOOSTER SYSTEM - RAY HARTSTEIN CAMPUS SKOKIE, IL.

OWNER OAKTON COMMUNITY COLLEGE
1600 EAST GOLF ROAD
DES PLAINES, IL.

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FAX 630-406-9472
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INDEX OF DRAWINGS

SEALS & CERTIFICATES

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH IBC 2015 EDITION, THE ENVIRONMENTAL BARRIERS ACT AND THE ILLINOIS ACCESSIBILITY CODE.

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OKATON COMMUNITY COLLEGE
7701 LINCOLN AVE
SKOKIE, IL 60077

ISSUED
12/09/22 BID DOCUMENTS

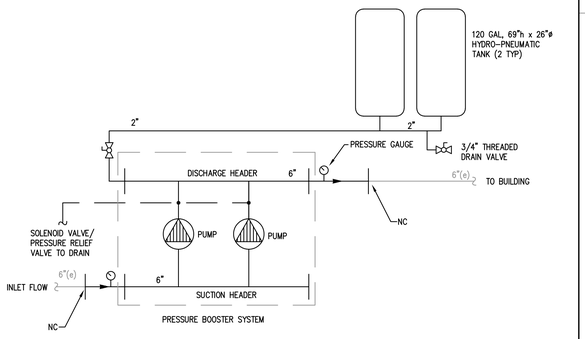
JOB NO.	22-315-1447
DRAWN	DDW
CHECKED	DDW/MTK
APPROVED	DDW

SHEET TITLE
COVER SHEET, GENERAL NOTES, SYMBOLS, & DRAWING INDEX

SHEET NUMBER
G100

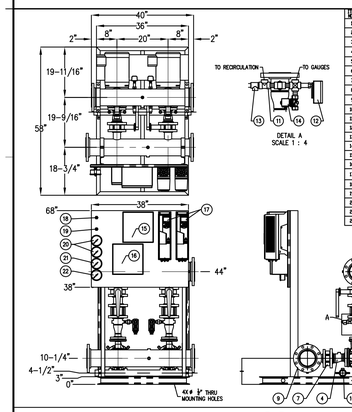
NOTE: SCALES DEPICTED ON THIS DRAWING ARE NOT CORRECT UNLESS PLOTTED SHEET SIZE IS 30 X 42 INCHES.

P:\1447 - Oakton - Skokie Domestic Water Pressure Booster System\3)_Design\Dwgs\DD-CD\01_Gen\1447G101(0).dwg, 12/12/2022 10:00:28 AM, DDW

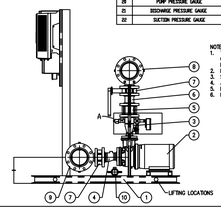


WATER PRESSURE BOOSTER PIPING DIAGRAM 4

SCALE: NTS



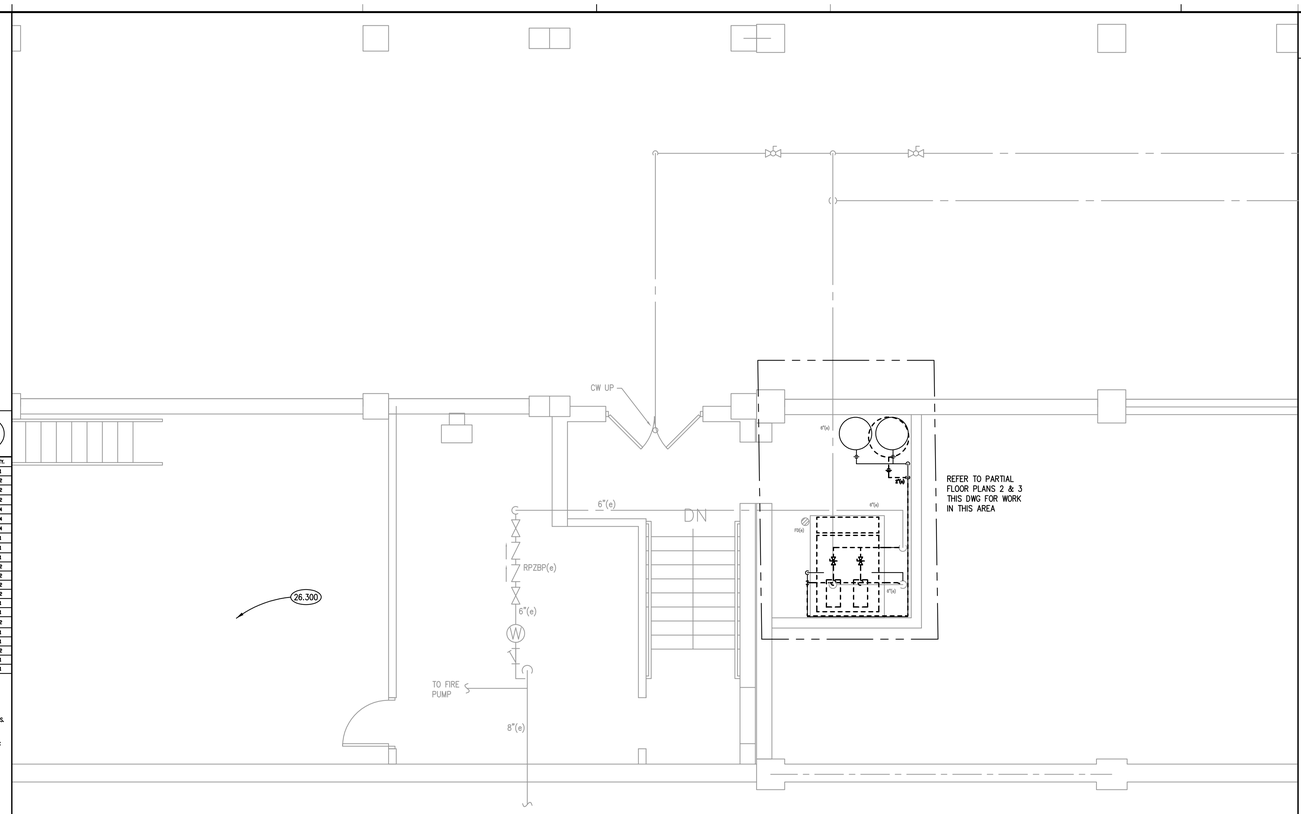
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	STRUCTURAL STEEL FRAME		1
2	GOULDS 45H	10 HP, END SUCTION PUMP	2
3	3" X 1 1/2" DISCHARGE SPOOL	ANSI CLASS 150 FLANGED, SCHED 40 SYSTEM BOND (ONLY) CARBON STEEL PIPE	2
4	3" X 2 1/2" SUCTION SPOOL	ANSI CLASS 150 FLANGED, SCHED 40 SYSTEM BOND (ONLY) CARBON STEEL PIPE	2
5	3" WAFER SILENT CHECK VALVE	SILENT CHECK VALVE, WAFER STYLE, ASSI CLASS 125/250	4
6	3" FABRICATED SPOOL	ANSI CLASS 150 FLANGED, SCHED 40 SYSTEM BOND (ONLY) CARBON STEEL PIPE	4
7	3" BUTTERFLY VALVE - HDBS	ANSI CLASS 125/150 BUTTERFLY VALVE - 250 PSI WOG	4
8	6" DISCHARGE HEADER	ANSI CLASS 150 FLANGED, SCHED 40 SYSTEM BOND (ONLY) CARBON STEEL PIPE	1
9	4" SUCTION HEADER	ANSI CLASS 150 FLANGED, SCHED 40 SYSTEM BOND (ONLY) CARBON STEEL PIPE	1
10	2" DRAIN HEADER	SCHED. 40 STAINLESS STEEL	1
11	ABRASTAT TREE	SCHED. 40 STAINLESS STEEL PIPING & FITTINGS	2
12	ASCO-ESAT	PUMP CASING WATER TEMP MONITOR	2
13	45 SIR C STD LF	30 TO 175 PSI, CONTRACTOR TO PIPE TO DRAIN	2
14	1/2" SOLENOID VALVE	VALVE, SOLENOID CONDUCTED 120 VAC 1/2" SST	2
15	METRO TECH CONTROL ENCLOSURE	C-SIGNAL WITH BRACKET	1
16	DISCONNECT ENCLOSURE	C-250256	1
17	ABB ACH-500 VFD	10 HP, 480 VOLT, 3 PHASE	2
18	PRESSURE TRANSDUCER 300 PSI	300 PSI	1
19	SUCTION PRESSURE TRANSDUCER	300 PSI	1
20	PUMP PRESSURE GAUGE	0-300 PSI	2
21	DISCHARGE PRESSURE GAUGE	0-300 PSI	1
22	SUCTION PRESSURE GAUGE	0-300 PSI	1



NOTE:
1. THIS DRAWING IS PRELIMINARY LAYOUT ONLY. NOT FOR CONSTRUCTION. CONSTRUCTION DRAWINGS WILL BE FORWARDED UPON RECEIPT OF APPROVED SUBMITTALS.
2. FIELD VERIFY EXACT DIMENSIONS FOR HEADER CONNECTIONS.
3. ALL PIPING SHALL BE SCHED. 40.
4. ADEQUATE LIFTING POINTS TO BE PROVIDED.
5. ESTIMATED SYSTEM WEIGHT: 1800 LBS.
6. DESIGN BASIS: METROPOLITAN INDUSTRIES, METRO VARIPAC

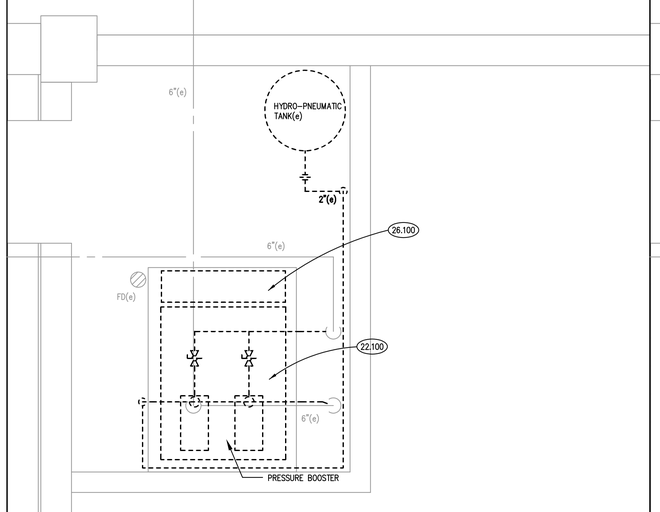
WATER PRESSURE BOOSTER DETAILS 5

SCALE: NTS



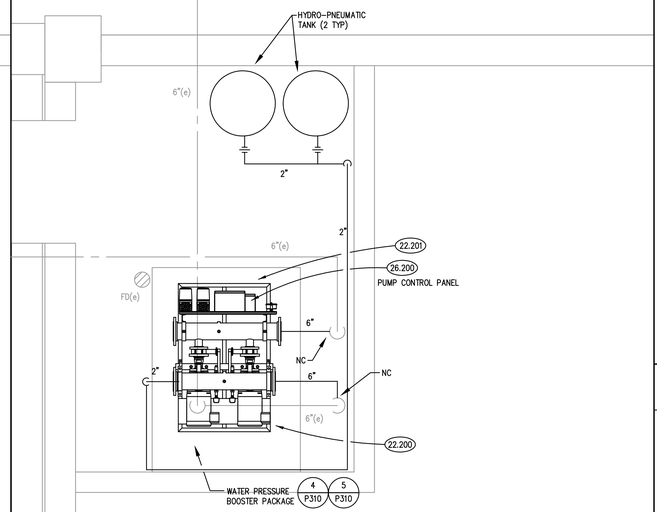
PARTIAL LOWER LEVEL FLOOR PLAN 1

SCALE: 1/4" = 1'-0"



PUMP ROOM DEMOLITION PLAN 3

SCALE: 1/2" = 1'-0"



PUMP ROOM PLAN 2

SCALE: 1/2" = 1'-0"

KEYNOTES

KEYNOTES ARE TYPICALLY NOT DUPLICATED WITHIN A GIVEN DETAIL. AN UN-KEYNOTED ITEM IN A DETAIL IS THE SAME AS A KEYNOTED ITEM HAVING THE SAME APPEARANCE WITHIN THE SAME DETAIL.

22.100 REMOVE EXISTING PRESSURE BOOSTER SYSTEM. PROVIDE TEMPORARY CAP ON FLANGES CONNECTED TO BUILDING WATER SERVICE.

22.200 PROVIDE NEW PRESSURE BOOSTER SYSTEM. PROVIDE ALL MATERIAL AND LABOR AS REQUIRED TO REVISE PIPING TO CONNECT NEW SYSTEM HEADERS AND BUILDING WATER SERVICE.

22.201 PROVIDE THE FOLLOWING INFORMATION INTERFACED INTO THE CAMPUS BUILDING AUTOMATION SYSTEM, WITH GRAPHIC DISPLAY; INCOMING PRESSURE, DISCHARGE PRESSURE, SYSTEM ALARM, PUMP VFD SPEED. CONTACT AND HIRE EXISTING CONTROLS CONTRACTOR FOR WORK; AUTOMATED LOGIC, ERIE DONES, 630-470-3705.

26.100 DISCONNECT AND PROTECT EXISTING ELECTRICAL CONNECTION TO PRESSURE BOOSTER SYSTEM TO BE REPLACED.

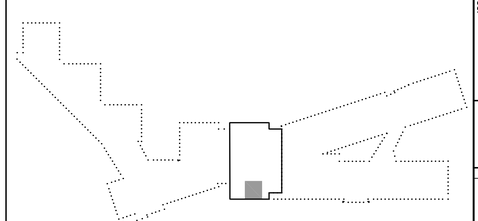
26.200 PROVIDE LIQUID-TIGHT FLEXIBLE CONNECTION AND RECONNECT FEEDER (FROM SWITCHBOARD BDL1) TO NEW BOOSTER SYSTEM CONTROL PANEL. EXISTING DRAWINGS INDICATE FEEDER IS 3#4,#8G 1 1/4" CONDUIT. REPLACE 40 AMPERE FUSES AT SWITCHBOARD BDL1 WITH 50 AMPERE FUSES.

26.300 APPROXIMATE LOCATION OF SWITCHBOARD BDL1 (IN MAIN ELECTRICAL SWITCHGEAR ROOM).

GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM.
3. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.
4. EXISTING PIPING INDICATED ON THESE PLANS SHALL BE FIELD VERIFIED FOR EXACT LOCATIONS, QUANTITY AND PIPE SIZES.
5. DO NOT CUT THROUGH STRUCTURAL ELEMENTS WHEN INSTALLING OPENINGS REQUIRED FOR ALL PIPING, CONDUITS OR OTHER WORK. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
6. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER PLUMBING COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.

KEY PLAN



PLAN NORTH

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ISSUED
12/09/22 BID DOCUMENTS

JOB NO.	22-315-1447
DRAWN	KJL
CHECKED	DDW
APPROVED	DDW

SHEET TITLE

PARTIAL LOWER LEVEL FLOOR PLANS AND DETAILS

SHEET NUMBER

P310

NOTE: SCALES DEPICTED ON THIS DRAWING ARE NOT CORRECT UNLESS PLOTTED SHEET SIZE IS 30 X 42 INCHES.

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